FINAL REPORT

Central Freeway AREAWIDE TRAFFIC STUDY

prepared for

SAN FRANCISCO DPT DEPARTMENT OF PARKING & TRAFFIC

DEPARTMENT OF PARKING & TRAFFIC
CITY AND COUNTY OF SAN FRANCISCO

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WILBUR SMITH ASSOCIATES
in association with
Pittman & Hames Associates
De Leuw Cather and Company
Stevens & Associates
Shor Acoustical Consultants

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Table 5-1 (Page 2 of 4) Key Intersections at LOS E & F

Alternative 8 has three (3) intersections at LOS E and one (1) intersection at LOS F.

Table 5-1 (Page 3 of 4) Queues on Central Freeway

Should be "Northbound" rather than "Southbound" in PM Peak.

Note

All traffic data for Alternative 8 are preliminary. This alternative was developed at the end of the study and requires additional analysis to develop optimum traffic flow. Detailed analysis of Alternative 8 should be included in the scope of the forthcoming environmental analysis.

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TABLE OF CONTENTS

CHAPTER

EXECUTIVE SUMMARY i
Introduction i
Preferred Alternative i
Funding and Implementation ii

1. INTRODUCTION 1-1
Study Objective 1-1
Report Organization 1-2

2. COMMUNITY/AGENCY PROCESS 2-1
Introduction 2-1
Citizens' Advisory Task Force 2-1
Community Meetings 2-2
Technical Advisory Committee 2-2
Community Outreach 2-2
Goals and Criteria 2-3

3. STUDY ALTERNATIVES 3-1
Introduction 3-1
Alternative 1 - Retrofit of Existing Structure 3-2
Alternative 2 - Single Deck "Hybrid" Concept 3-2
Alternative 3 - Low Single Deck Freeway Depressed North of Market Street .. 3-2
Alternative 4 - Deep Tunnel Under Muni Metro 3-3
Alternative 5 - Freeway Traffic Access Dispersal 3-3
Alternative 6 - Van Ness Avenue and Gough/Franklin Corridor Direct Ramp . 3-4
Alternative 8 - South of Market Refinement 3-4
Alternative 9 - Otis/Duboce Terminus 3-5

4. TRAFFIC ANALYSIS 4-1
Introduction 4-1
Freeway Volumes 4-2
Traffic on Arterial Streets 4-3
Market Street Crossing Reserve Capacity Analysis 4-4
Freeway Queuing Characteristics 4-5
Level-of-Service at Key Study Area Intersections 4-6

5. EVALUATION OF ALTERNATIVES 5-1
Introduction 5-1
Notes to Evaluation Matrix (Table 5-1) 5-1
Visual Criteria 5-1
Neighborhood Cohesion 5-2
Impact on Other Modes 5-2
Traffic 5-4
Environmental Impacts 5-5
Construction Impacts 5-6
Financial/Implementation 5-7
Safety 5-7

6. FUNDING AND IMPLEMENTATION 6-1
Funding 6-1
Emergency Relief Funding 6-1
Emergency Relief Stand-By Appropriation 6-2
STIP and RTP Reprogramming 6-2
Surplus Land Sales 6-3
Seismic Retrofit Program 6-3
San Francisco County Transportation Sales Tax Funding 6-4
Regional Gas Tax 6-4
General Fund 6-5
Statewide Trades 6-5
Special Federal Demonstration Funding 6-5
Preliminary Conclusions 6-5
Implementation Period 6-6
Environmental Documentation 6-6
Design, Property Acquisition and Construction 6-7
Total Implementation Time 6-7

7. RECOMMENDATIONS 7-1
Introduction 7-1
Preferred Alternatives 7-1
Alternative 3 - Low Single Deck Freeway Depressed North of Market Street 7-1
Alternative 8 - South of Market Refinement 7-3
Next Steps for Implementation 7-4
Immediate Actions 7-4

APPENDICES
Appendix A: Report of the Citizens Task Force
Appendix B: Citizen's Advisory Task Force Report of Recommendations

ILLUSTRATIONS

Figure		Follows
1-1	Existing Central Freeway	1-2
3-1	Alternative 1 - Double-Deck Retrofit	3-5
3-2	Alternative 2 - Single-Deck Retrofit	3-5
3-3	Alternative 3 - Low Deck Over Market	3-5
3-4	Alternative 4 - Deep Tunnel Under Market	3-5
3-5	Alternative 5 - Freeway Traffic Access Dispersal	3-5
3-6	Alternative 6 - Direct Ramp to South Van Ness	3-5
3-7	Alternative 8 - South of Market Refinement	3-5
3-8	Alternative 9 - Otis/Duboce Terminus	3-5
4-1	1995 Freeway and Ramp Volumes Weekday PM Peak Hour	4-6
4-2	Forecast PM Peak Hour Freeway Volumes: Alternative 1 - Base Case	4-6
4-3	Forecast PM Peak Hour Freeway Volumes: Alternative 3 - Low Deck	4-6
4-4	Forecast PM Peak Hour Freeway Volumes: Alternative 5 Freeway Traffic Dispersal	4-6
4-5	Forecast PM Peak Hour Freeway Volumes: Alternative 6 - Direct Ramps to Van Ness Corridor	4-6
4-6	Forecast PM Peak Hour Freeway Volumes: Alternative 8 - South of Market Street Refinement	4-6
4-7	Forecast Changes to Surface Street Traffic: Alternative 3 - Low Deck	4-6
4-8	Forecast Changes to Surface Street Traffic: Alternative 5 - Freeway Traffic Dispersal	4-6
4-9	Forecast Changes to Surface Street Traffic: Alternative 6 - Direct Ramps to Van Ness Corridor	4-6
4-10	Forecast Changes to Surface Street Traffic: Alternative 8 - South of Market Street Refinement	4-6
4-11	Vehicles Crossing Market Street on Surface in the PM Peak Hour	4-6
5-1	Transit Routes in the Study Area	5-7
5-2	Planned Bike Routes in Study Area	5-7
5-3	Locations of Measurements and Modelled Receptors	5-7

TABULATIONS

Table		
2-1	Citizens' Advisory Task Force for the Central Freeway Current Members	2-1
4-1	Summary of Reserve Capacity of Through Traffic Crossing Market Street Weekday PM Peak Hour	4-4
4-2	Level of Service at Selected Intersections for Different Alternatives	4-6
5-1	Evaluation Matrix	5-1
6-1	Impacts of Proposed Land Sale	6-3
6-2	Estimated Implementation Time in Months	6-8

EXECUTIVE SUMMARY

INTRODUCTION

San Francisco's Central Freeway runs from the James Lick Freeway (I-80/US-101) over Market Street into the Hayes Valley/Western Addition neighborhood. The Central Freeway was constructed in 1959 as part of an overall freeway network planned for the City, much of which was never built. The freeway was intended to run north to the Golden Gate Bridge and west to Golden Gate Park, but considerable citizen opposition halted those projects and the freeway terminated just west of the Civic Center area with ramps to or from Franklin, Gough, Oak and Fell Streets.

The 1989 Loma Prieta Earthquake resulted in removal of the US-101 ramps leading to Franklin/ Gough Streets, creating a number of significant problems including:

1. Traffic increases of 30 percent on Oak Street and 20 percent on Fell Street;

2. Conflicts between on and off freeway traffic at Fell and Laguna Streets, causing major traffic congestion on city streets and the Freeway; and

3. Traffic increases of 120 percent at the South Van Ness Avenue on-ramp and 25 percent at the Mission Street off-ramp.

In addition, the Central Freeway is not constructed to current seismic standards and requires either retrofit, reconstruction or demolition. The objective of this study is to select the City's preferred alternative for the Freeway.

PREFERRED ALTERNATIVES

A wide range of alternatives was considered in Phase II of the Central Freeway Study, including those involving either seismic retrofit of the existing double-deck freeway structure, or removal of the current concrete structure north of Mission Street and rebuilding the Freeway crossing Market Street either over, under or at-grade. Alternatives crossing Market Street at-grade also proposed capacity increases in other areas to handle the traffic currently crossing over Market Street.

In late August of 1995, Wilbur Smith Associates recommended that Alternative 3 be pursued as the preferred alternative. On September 18, the Citizens' Advisory Task Force for the Central Freeway endorsed Alternative 8 as the alternative recommended to the Board of Supervisors. On October 17, the Board of Supervisors adopted a resolution recommending that both alternatives plus a "no build" retrofit alternative be studied in an environmental process.

Alternative 3 provides a low single-deck crossing of Market Street then descends under Haight Street and surfaces again near Oak Street. The freeway is entered at Octavia and Oak Streets, with eastbound traffic coming from Oak Street and southbound traffic from Octavia Street. Westbound traffic exits the freeway at Fell and Laguna Streets (as it does today) while northbound traffic would exit eastbound at Oak Street and turn north on Franklin Street. By going underground, the east-west Haight Street and Page Street connections would remain open to traffic. The section between Haight and Page Streets could remain open or decked over and used for development or open space.

Alternative 8 was developed by the Citizens Advisory Task Force after review of other South of Market alternatives. North of Market Street, this alternative is identical to Alternative 3, but instead of crossing over Market Street, brings the Freeway to grade at Market with a signalized intersection. South of Market, the present Mission Street off-ramp is replaced by new off-ramps at South Van Ness and Duboce Avenues.

FUNDING AND IMPLEMENTATION

Following the Loma Prieta earthquake the Federal Highway Administration, in cooperation with Caltrans, allocated $40-million in Emergency Relief (ER) funds for the Central Freeway. After demolition and temporary shoring of the remaining structure, plus design and planning costs to date, only $27-million of the $40-million remains. This is considerably less than required for Alternatives 3 and 8 which are estimated to cost $70- to $80-million, or even retrofit of the existing structure which is estimated to cost at least $45-million.

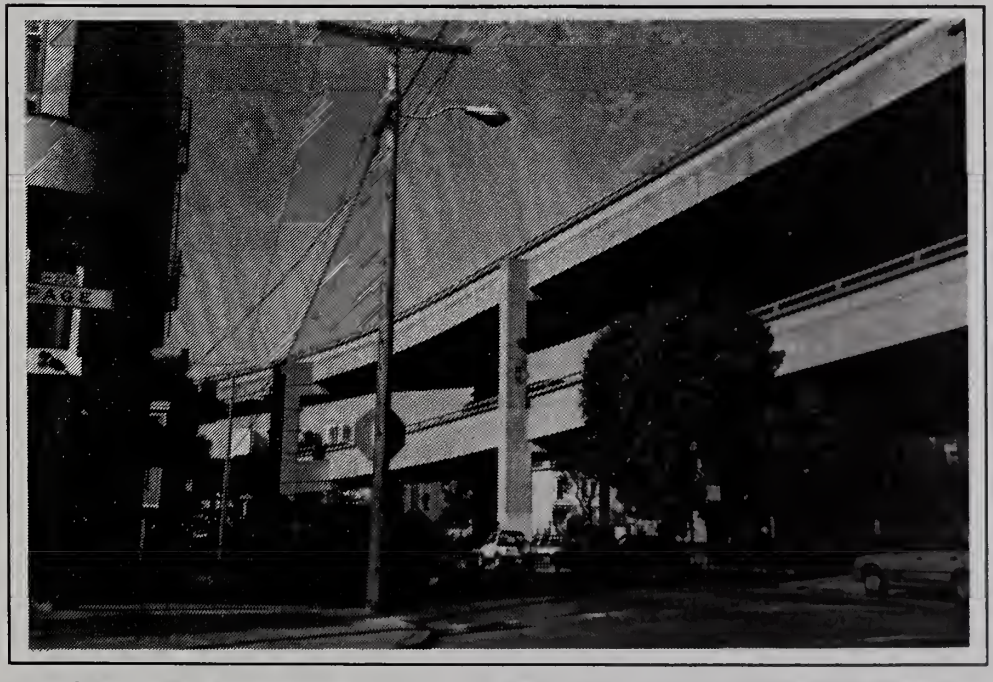
There are no available sources of revenue that can easily be tapped to make up the funding shortfall for the selected Central Freeway alternative. The recommended primary strategy is immediate pursuit of additional federal Emergency Relief funding. The next logical source would be the reprogramming of existing projects in the STIP's seismic program. Potential sources of local match resources include land sale revenues, new seismic retrofit funds, regional gas tax funds, and a very small portion of eligible sales tax funds.

To implement a preferred alternative as soon as possible, it is suggested that the City and Caltrans develop an implementation strategy including:

1. Acquiring sufficient funding for the alternatives;
2. Expediting the preparation of environmental documentation; and
3. Dealing with the existing structure during the environmental process.

All the above should be coordinated closely with the Citizens' Advisory Task Force, which will be continued through environmental and subsequent phases and should continue to have significant input in the process.

The Freeway is a single deck steel structure south of Mission Street



It becomes a double-deck concrete structure north of Mission Street

Demolition of the Freeway structure north of Fell Street has improved the Hayes Valley environment and stimulated small commercial development

Citizen interest and response was sought through signs on nearby streets

The existing double-deck structure obscures views up and down Market Street

MUNI's new F-Line Historic Trolley passes under the freeway at Market Street

The traffic conflict at Fell and Laguna Streets between traffic entering and exiting the Freeway, congests traffic on both the Freeway and arterials

1. INTRODUCTION

STUDY OBJECTIVE

San Francisco's Central Freeway (Figure 1-1) runs from the James Lick Freeway over Market Street into the Hayes Valley/Western Addition neighborhood. The Freeway is an elevated steel viaduct over 13th Street for 0.8 miles between I-80 and Mission Streets. It becomes a double-deck concrete structure for its remainder, running from Mission for 0.55 miles to its current terminus at Oak and Fell Streets. The Objective of Phase II of the Central Freeway Areawide Traffic Study is to select the City's preferred alternative for the future freeway and related traffic network.

The Central Freeway was constructed in 1959 as part of an overall freeway network planned for the City, much of which was never built. It connects with I-80 to the east, providing direct access to the East Bay via the Bay Bridge, and connects with Highway 101 south to the San Francisco International Airport and San Jose. The freeway was intended to run north to the Golden Gate Bridge and west to Golden Gate Park, but considerable citizen opposition halted those projects and the freeway terminated just west of the Civic Center area with ramps to or from Franklin, Gough, Oak and Fell Streets.

Prior to the 1989 Loma Prieta Earthquake, the Central Freeway carried 100,000 vehicles per day over Market Street. The earthquake resulted in the removal of the US-101 ramps leading to Franklin/Gough Streets. This caused a drop in daily traffic over Market Street to 80,000 and resulting in significant impacts to many arterials and key intersections. It created three particular and significant problems:

1. Much of the traffic that used to access and exit the Freeway via Gough and Franklin Streets shifted to Oak and Fell Streets, thereby increasing traffic by 30 percent on Oak Street and 20 percent on Fell Street;

2. Traffic from the north getting on the freeway at Oak Street has to cross traffic exiting from the freeway at Fell and Laguna Streets, thereby causing major traffic congestion on both city streets and the Freeway itself; and

3. Traffic increased by 120 percent at the South Van Ness Avenue on-ramp and by 25 percent at the Mission Street off-ramp, leading to major congestion at South Van Ness intersections at Mission, Howard and Division Streets.

In addition, the remainder of the Freeway is not constructed to current seismic standards and requires either retrofit, reconstruction or demolition.

The Franklin/Gough Central Freeway ramps were demolished in late 1991/early 1992 and Caltrans began seismic retrofit design for the remainder of the Freeway. Following public hearings on freeway replacement, the Board of Supervisors approved resolution 541-92 in July of 1992, which made it the City's policy *not to build any new above-ground ramps north of Fell Street to replace the demolished sections of the Central Freeway.* The City then obtained funding for Phase I of the study, to look at the future of the Freeway and particularly the traffic problems that were caused by terminating the Freeway at Fell and Oak Streets.

Phase I of the Study concluded in its August 1994 report that the City and Caltrans should examine alternatives to a simple retrofit of the existing double-deck concrete structure. Caltrans agreed to have alternatives examined and to fund Phase II of the Study, but requested that a finding be made as soon as possible, no more than six months after the beginning of the study. Phase II of the Study began in mid-March of 1995, with the goal of having a recommended alternative by September of 1995.

REPORT ORGANIZATION

Various issues were documented during the study in the form of ten detailed technical memoranda. This report summarizes and updates much of the information contained in the technical memoranda and has the following chapters:

Chapter 2: Community/Agency Process
Chapter 3: Project Alternatives
Chapter 4: Traffic Analysis
Chapter 5: Comparison of Alternatives
Chapter 6: Funding and Implementation
Chapter 7: Recommendations

The complete technical memoranda and other relevant information are contained in Volume II, which has been reproduced in limited quantities.

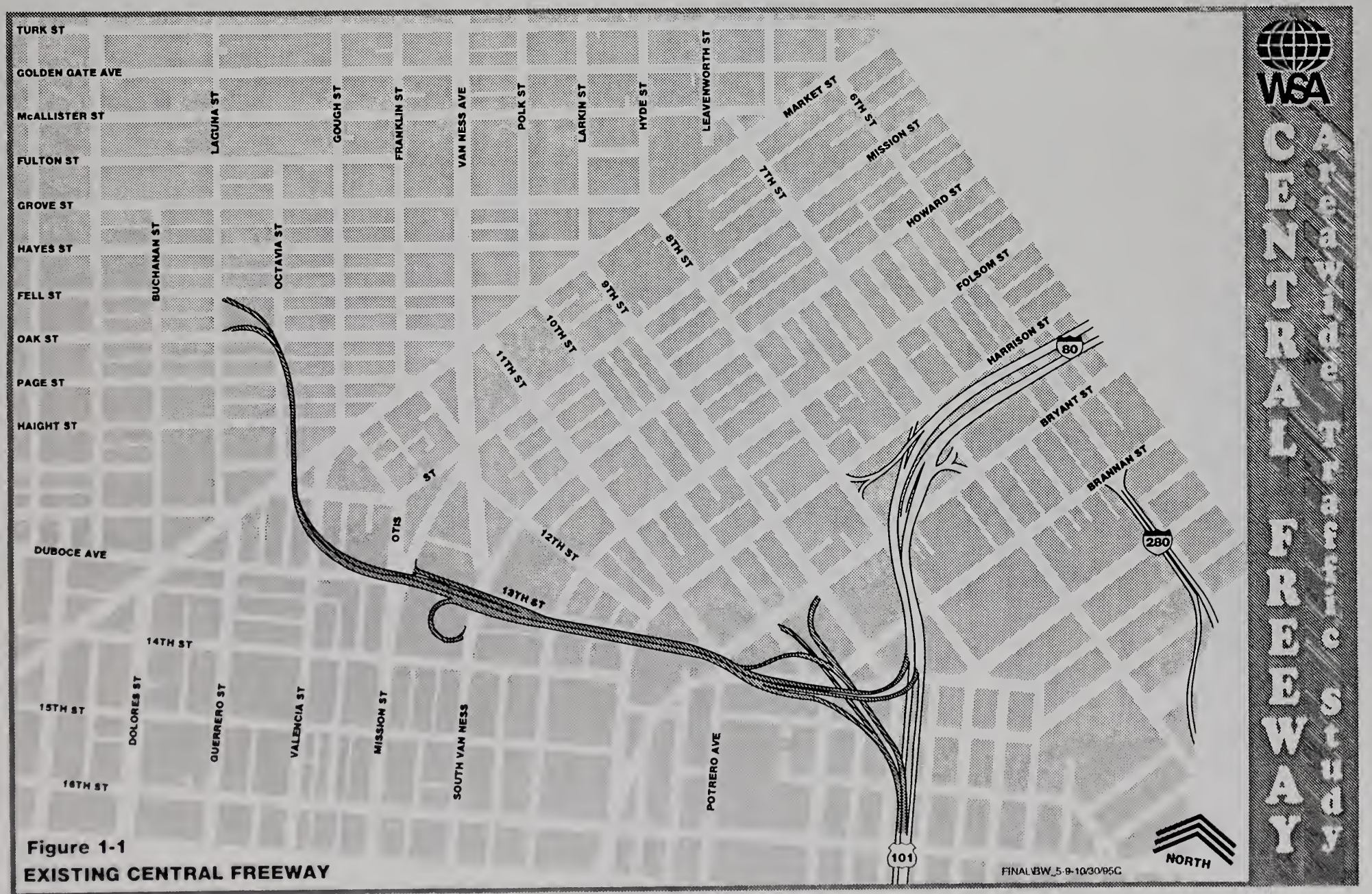


Figure 1-1
EXISTING CENTRAL FREEWAY

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2. COMMUNITY/AGENCY PROCESS

INTRODUCTION

The Central Freeway study process was conducted with extensive community input. The primary vehicle for community input and response was the Citizen's Advisory Task Force for the Central Freeway, appointed by the San Francisco Board of Supervisors. Two major community-wide meetings were also conducted during the study.

CITIZENS' ADVISORY TASK FORCE

The original 17-member Hayes Valley/Western Addition Transportation Task Force was appointed in February 1994 and consisted of 13 residents of the Hayes Valley and Western Addition neighborhoods, two residents of the South of Market neighborhood, and one member each from San Francisco Beautiful and the American Association of Architects. In December 1994, the Board of Supervisors changed the name of the Task Force to the Citizens' Advisory Task Force for the Central Freeway and increased the membership to 26 members. The new task force members were to represent the Richmond, Panhandle, Sunset, Mission, Haight, South of Market and South Van Ness neighborhoods, as well as the urban design profession and the San Francisco County Transportation Authority Citizens' Advisory Committee.

In February 1995, the Board of Supervisors expanded the membership of the Task Force to 30 members by adding four "at-large" positions, which could be filled by residents of any neighborhood. The membership in September of 1995 is shown in Table 2-1.

Ten task force meetings were held between April and September 1995. These meetings were "hands-on" technical sessions with the consultant team, members of the public, and representatives from various City departments and Caltrans.

In order to expedite the complex task of developing and evaluating study alternatives, the Task Force formed subcommittees in the following disciplines:

1. Funding and Legislation
2. Goals and Criteria
3. Community Outreach
4. Design Charrette
5. Schedule
6. Report

Table 2-1

CITIZENS' ADVISORY TASK FORCE FOR THE CENTRAL FREEWAY
CURRENT MEMBERS
(September 1995)
Central Freeway - Phase II

Hayes Valley - Western Addition	
1. Bernard Choden	8. Mark Pope
2. Wayne Corn, Chair	9. Tom Girardot
3. Lynne Creighton	10. Richard Johnson
4. Robert Daniels	11. Cecilia Sheppard
5. Fran De Noto	12. [Vacant]
6. Craig Etlin, Vice Chair	13. Nancy Zimmer
7. Fredia Hall	
American Institute of Architects	**San Francisco Beautiful**
14. [Vacant]	15. Ephraim Hirsch
South of Market	
16. Ian Ayers	17. Lee Meyerzove
23. Roddy Creedon	
Richmond	**Panhandle**
18. [Vacant]	19. Judith Kaminsky
Sunset	**Mission**
20. [Vacant]	21. Luis Pardo
Haight	**South Van Ness**
22. Steve Taber	24. Judy West
Urban Design Profession	**SFCTA CAC**
25. Kate Carroll	26. Linda Salas
At-Large	
27. Michelle Brant	29. Lonnie Lawson
28. David Heller	30. Tom Radulovich

Source: S.F. DPT; Pittman & Hames, 1995

Note: Existing four vacancies are in the process of being converted to At-Large position by the Board of Supervisors.

Wilbur Smith Associates; September 1995

To aid in developing alternatives, the Task Force sponsored two Saturday design "charrettes" on April 22 and April 29, 1995. In addition, a number of Task Force subcommittee meetings were held, all of which were open to the public.

COMMUNITY MEETINGS

Two evening community meetings were conducted on May 18, and September 14, 1995. The May 18 meeting had an attendance of 147. After an overview of the study schedule, process and criteria, study alternatives developed by the consultant and Task Force were described. Participants then commented on the alternatives, process and criteria. In addition, over 80 members of the public returned questionnaires provided at the meeting. Input from the May 18 Meeting was used by the Task Force and the consultants to develop and refine alternatives under consideration.

Over 170 persons attended the September meeting. The Consultants presented analyses of the alternatives and there was considerable public comment on which alternatives were favored.

TECHNICAL ADVISORY COMMITTEE

In conjunction with the Task Force meetings and community workshops, a Technical Advisory Committee (TAC) comprised of representatives of public agencies participated in the study. The TAC included representatives from the Department of Parking and Traffic, (DPT), Caltrans District 4, the Municipal Railway (MUNI), the Department of City Planning (DCP), the San Francisco County Transportation Authority (SFCTA), the Department of Public Works (DPW), and the Mayor's Office.

The TAC received copies of all technical memoranda and was consulted throughout the study. A formal meeting of the TAC was held on September 7, 1995. Many TAC members were also regular attendees at Task Force meetings.

COMMUNITY OUTREACH

In order to ensure that as many members of the public as possible were aware of the Central Freeway study, a variety of community outreach techniques were utilized. These included press releases, newsletters, paid advertisements in citywide and local neighborhood newspapers, advertisements in "Community Calendar" section of newspapers, a telephone information and comment line and special signs posted on major streets within the Central Freeway corridor. Task Force members also participated in community outreach by attending various community meetings and by posting and distributing meeting notices throughout their neighborhoods.

Almost 2,000 persons are on the Central Freeway mailing list. The mailing list included over 300 neighborhood organizations throughout the City, as well as all persons who had attended any meetings, left their mailing address on the information line, or expressed an interest in the project.

In May 1995, a traffic sign reading "*REMOVE OAK-FELL RAMPS? FOR INFO CALL 554-2397*" was placed on Fell Street at Laguna Street, near the Fell Street Central Freeway exit ramp. By dialing this phone number callers could hear a recorded message about the Central Freeway study, and were invited to leave their name and address if they wished to be placed on the Central Freeway mailing list. Callers were also invited to leave comments regarding the Central Freeway study. As of September 1995, more than 500 callers had left messages on this line. Additional signs reading *THIS FREEWAY'S FUTURE? REMOVE, REPLACE, RETROFIT? FOR INFO CALL 554-2397*" were placed at the corner of South Van Ness Avenue and Howard Street and on Market Street just west of the Central Freeway overpass at the suggestion of the Task Force. Flyers with the same message were placed at a variety of locations along portions of the Market and Mission Streets sidewalks under the Central Freeway.

A Spanish language Central Freeway information line went into service in August 1995. A separate telephone number was used for the Spanish telephone line.

The Department of Parking and Traffic has also received over 60 written comments, a number of letters from residents and businesses regarding the study.

GOALS AND CRITERIA

Choosing a preferred alternative for the Central Freeway required evaluating each alternative by various criteria that were based on the goals and objectives of the study. Early in the process, the Task Force developed and adopted the Goals and Criteria for evaluation that are presented in this chapter. These criteria and others added by the consultant team were used to evaluate alternatives as described in Chapter 5.

Goal: Select a preferred alternative of traffic and transit improvements for the Central Freeway corridor.

Criteria:

- Minimize negative visual impacts:
  - Apply good urban design principles;
  - Recognize the importance of Market Street as a visual corridor, a major public transit corridor, and a grand boulevard, and advance the City's efforts to improve Market Street; and
  - Preserve the historic character and structures of the affected neighborhoods.

- Promote neighborhood cohesion:
  - No single neighborhood should bear the burden of freeway traffic;
  - High-volume traffic should be routed around neighborhoods and onto major traffic arteries; and
  - Design should encourage traffic to move within legal speed limits.

- Allow the maximum reclamation of freeway land for housing, open space, and neighborhood-serving commercial uses.

- Allow for better management of all elements of the transportation system (Multimodalism):
  - Promote public transit operations and the City's Transit-Preferential Streets Program;
  - Facilitate pedestrian access to public transit; and
  - Be compatible with both the existing public transit system and planned improvements.

- Accommodate traffic circulation:
  - Allow for better integration of the freeway system with the system of City streets;
  - Offer better choices of freeway access/egress direction; and
  - Minimize disruption during construction period.

- Promote a healthy environment:
  - Respect and improve the quality and integrity of public open spaces;
  - Allow for safe neighborhood streets; and
  - Promote improved air quality and reduction of noise impacts.

3. STUDY ALTERNATIVES

INTRODUCTION

A wide range of facility and traffic operation concepts was considered in Phase II of the Central Freeway Study. The Phase II alternative concepts for the Central Freeway are shown in Figures 3-1 through 3-8 and are briefly described below:

Alternative 1: Seismic retrofit of the existing double-deck freeway structure.

Alternative 2: Single-deck retrofit elevated crossing of Market Street terminating at Fell Street.

Alternative 3: Low-deck crossing of Market Street, with a depressed segment between Haight and Page Streets.

Alternative 4: Deep tunnel under MUNI Metro terminating at Fell Street.

Alternative 5: Dispersal of freeway traffic involving street reversals and segregation of Central Freeway off-ramp traffic approaching from the I-80 and US-101 freeways.

Alternative 6: Termination of the Central Freeway south of Market Street with direct ramps oriented toward the Gough/Franklin and Van Ness Avenue corridors.

Alternative 7: Underground crossing of Market Street at 10th Street (not shown)

Alternative 8: Freeway coming to grade at Market Street with a depressed segment under Haight and Page Streets and new off-ramps at South Van Ness and Duboce Avenues.

Alternative 9: Freeway terminating at South Van Ness Avenue in the northbound direction with new southbound on-ramps over Mission Street coming from Otis Street and Duboce Avenue.

Alternative 7, through joint agreement of the consultant and the Citizens' Task Force, was not analyzed in any detail and so is not discussed further in this report.

ALTERNATIVE 1 - RETROFIT OF EXISTING STRUCTURE

This alternative (Figure 3-1), developed by Caltrans, would strengthen the existing viaduct to current seismic design criteria. Retrofit improvements have been designed and are planned for the steel structure segment south of Mission Street beginning at the end of 1995.

For the concrete section, the two freeway stubs (the Gough/Franklin stub and the Panhandle Freeway stub near Market Street) would be removed as part of the retrofit project. The present double-decked structure would otherwise remain basically unchanged, except for the larger support columns and "jacketed" inner columns.

For this analysis, it is assumed that the retrofit proposal would provide the same connections to local streets as are present today. However, Caltrans is developing alternative ramps that would provide connections similar to Alternative 3.

ALTERNATIVE 2 - SINGLE-DECK "HYBRID" CONCEPT

Alternative 2 (Figure 3-2), also developed by Caltrans, attempts to minimize the required construction closure time for the Central Freeway and, at the same time, improve freeway connections to the Gough/Franklin corridor. Its new single-deck would also decrease view blockages. Several concepts are presently being explored by Caltrans for the freeway itself as well as connections to the local street system. In general, these concepts would involve replacing the double deck freeway structure between Mission Street and Fell Street with a single-deck elevated roadway.

The alternative analyzed in this study crosses Market Street at the level of the present upper deck and would continue as a single-deck elevated freeway along the present alignment to Oak Street. At Oak Street the elevated Oak and Fell ramps would swing over to end at Laguna Street similar to the present configuration. As in Alternative 1, alternative ramps at Oak and Fell Streets could provide traffic service similar to Alternative 3.

ALTERNATIVE 3 - LOW SINGLE-DECK FREEWAY DEPRESSED NORTH OF MARKET STREET

Alternative 3 (Figure 3-3) was first proposed by San Francisco Tomorrow and then modified by the Consultant Team. It provides a single-deck crossing of Market Street but, unlike Alternative 2, crosses at a much lower level and descends underground and surfaces again near Oak Street. The freeway is entered at Octavia and Oak Streets, with eastbound traffic coming from Oak Street and southbound traffic from Octavia Street. Westbound traffic exits the freeway at Fell and Laguna Streets (as it does today) while northbound traffic would exit eastbound at Oak Street and turn north on Franklin Street.

By going underground, the east-west Haight Street and Page Street connections would remain open to traffic. The section between Haight and Page Streets could remain open or decked over and used for development or open space.

ALTERNATIVE 4 - DEEP TUNNEL UNDER MUNI METRO

Alternative 4, (Figure 3-4) developed by the Consultant Team, would have similar traffic connections as Alternative 3, but would route the Central Freeway beneath Market Street rather than crossing above it at a low level. The Freeway would cross above Mission Street and pass under the MUNI Metro tunnel (Note: there is not enough clearance available to cross under Market Street above the MUNI Metro tunnel). Alternative 4 would have tunnel portals for the Freeway between:

- Duboce Avenue and Valencia Street;
- Page and Oak Streets; and
- Oak, Fell, Octavia and Laguna Streets.

Duboce Avenue in the westbound direction would be closed to allow the Central Freeway to come to grade.

ALTERNATIVE 5 - FREEWAY TRAFFIC ACCESS DISPERSAL

Alternative 5, (Figure 3-5) developed by the Task Force, segregates Bay Bridge (I-80) and Peninsula (US-101) freeway traffic exiting onto San Francisco surface streets in the study area. These new freeway facilities would be complemented by a system of operational changes to the surface street system, most notably reversing the direction of Eighth, Ninth and Tenth Streets. The intent of these changes would be to directly route traffic to/from the freeway and to more uniformly distribute freeway traffic crossing Market Street. Physically, the Central Freeway would end at Market Street opposite from Octavia Street within the present alignment of the elevated freeway.

In order to provide the new Otis Street elevated on-ramp merge to the southbound Central Freeway, the northbound Central Freeway lanes would need to be elevated 20 to 25 feet above the southbound Central Freeway lanes. About 400 feet of the northbound freeway on each side of Mission Street would be at a different elevation (double deck) than the southbound freeway, requiring reconstruction of much of the freeway segment between Mission Street and I-80.

ALTERNATIVE 6 - VAN NESS AVENUE AND GOUGH/FRANKLIN CORRIDOR DIRECT RAMP

Alternative 6, (Figure 3-6) developed by the Task Force, terminates the freeway at Market Street similar to Alternative 5 and provides new, direct ramps to/from the Van Ness Avenue and Gough/ Franklin corridors. Physically, the Central Freeway would fork into two elevated branches above South Van Ness Avenue with one branch serving the Oak/Fell, Upper Market Street and Mission Street corridor (referred to as Valencia Street branch) and the second branch serving the Van Ness Avenue and Gough/Franklin Street corridors.

The Valencia Street exit branch would serve traffic destined for Upper Market Street, the Mission District and the Oak/Fell Streets corridor. After exiting onto Valencia Street, traffic bound for the Oak/Fell Streets corridor would continue across Market Street on an expanded four-lane Octavia Street. Traffic bound for the Mission District would use the new Valencia Street off-ramp and turn left onto southbound Valencia Street. Traffic bound for Upper Market Street would exit at Valencia Street and turn right onto Duboce Avenue.

The Van Ness Avenue exit branch would serve northbound Central Freeway traffic bound for Van Ness Avenue or Franklin Street. The Van Ness Avenue exit branch would split away from the Valencia Street exit branch as the Central Freeway crosses over South Van Ness Avenue. About 600 feet downstream from this fork, the off-ramp would branch again into a South Van Ness Avenue ramp and a Franklin Street ramp. The South Van Ness Avenue ramp would come down to grade near the Mission Street intersection. The Franklin Street elevated off-ramp would come down to grade at Market Street after passing over Otis and Mission Streets.

The Central Freeway would be a double deck facility near South Van Ness Avenue and the steel single-deck section of the Central Freeway between I-80 and Mission Street would also need to be included in the freeway reconstruction. The present South Van Ness Avenue loop on-ramp would be closed.

ALTERNATIVE 8 - SOUTH OF MARKET REFINEMENT

Alternative 8 (Figure 3-7) was developed by the Task Force after review of other South of Market alternatives. North of Market Street, this alternative is identical to Alternative 3, but instead of crossing over Market Street, brings the Freeway to grade at Market with a signalized intersection. South of Market, the present Mission Street off-ramp is replaced by new off-ramps at South Van Ness and Duboce Avenues.

ALTERNATIVE 9 - OTIS/DUBOCE TERMINUS

Alternative 9 (Figure 3-8), developed by the Task Force, terminates the Freeway further south than the other alternatives. In the northbound direction, new exits are provided at South Van Ness Avenue and, for traffic coming from the south, a new slip-ramp to Division Street at its intersection with Bryant Street. New on-ramps in the southbound direction over Mission Street would be provided from Otis Street and Duboce Avenue. Octavia Street would be widened to provide two southbound lanes which would connect with McCoppin Street at the current signalized intersection at Market Street.

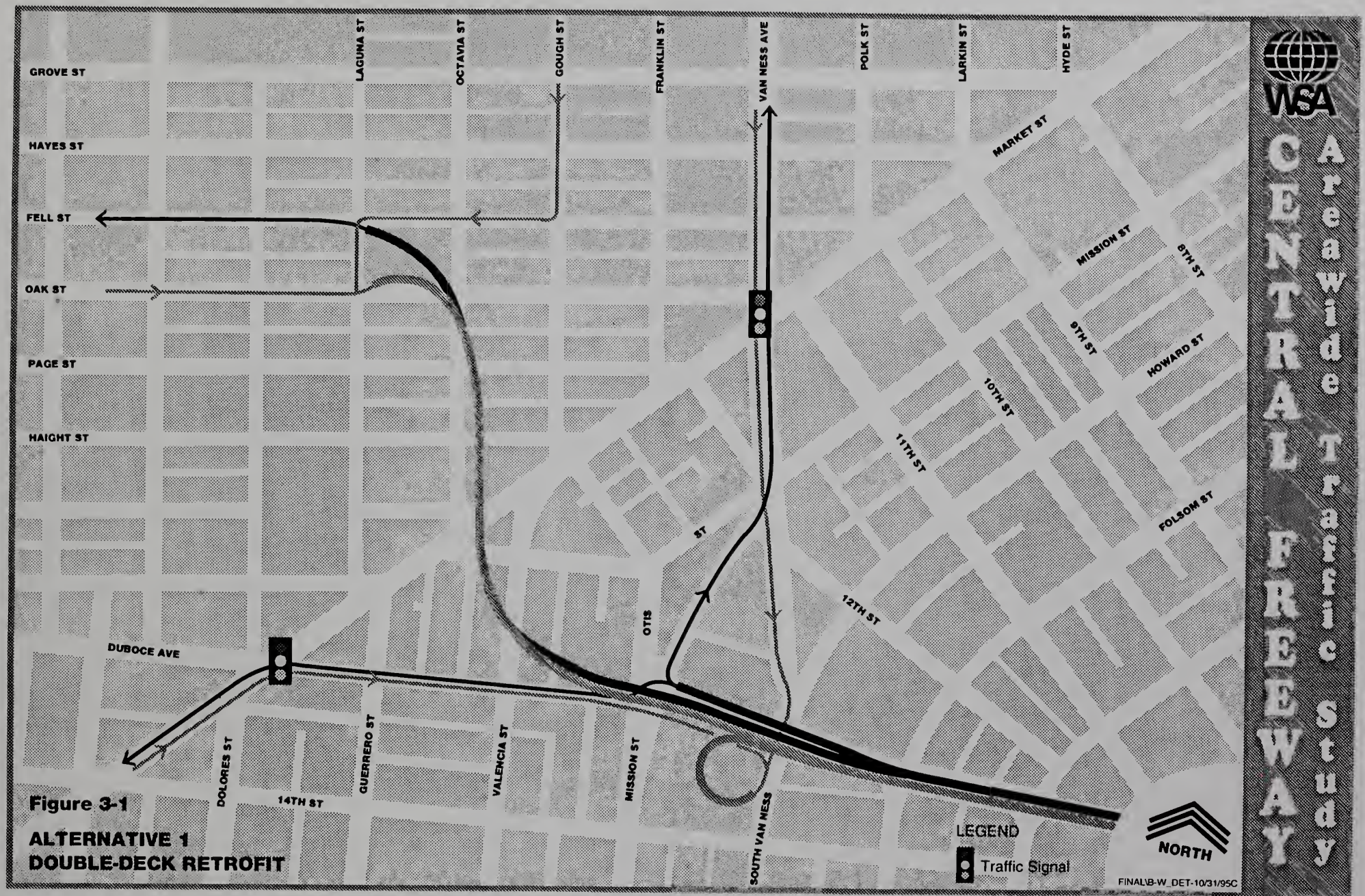

Figure 3-1

ALTERNATIVE 1
DOUBLE-DECK RETROFIT

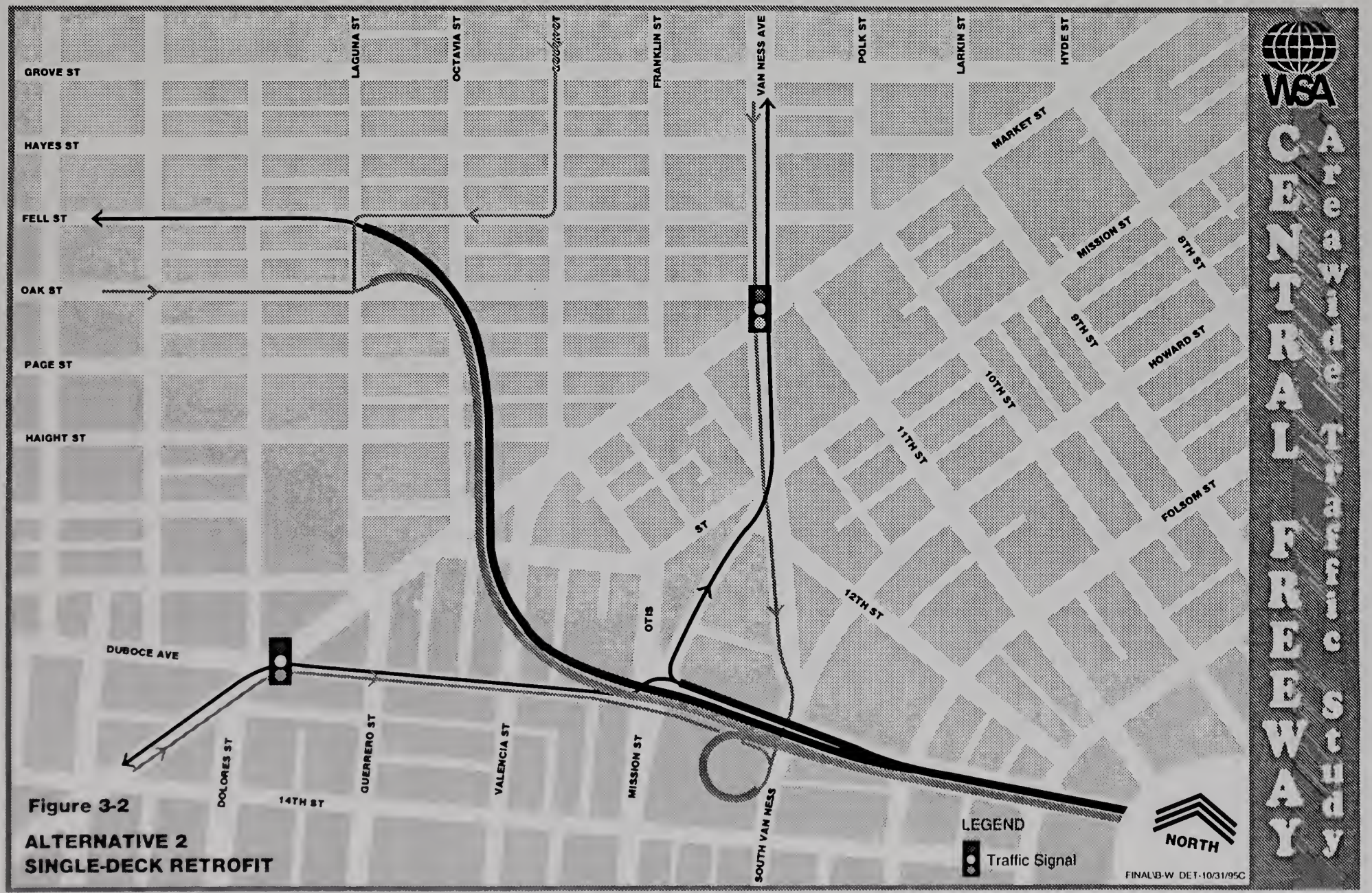

Figure 3-2

ALTERNATIVE 2
SINGLE-DECK RETROFIT

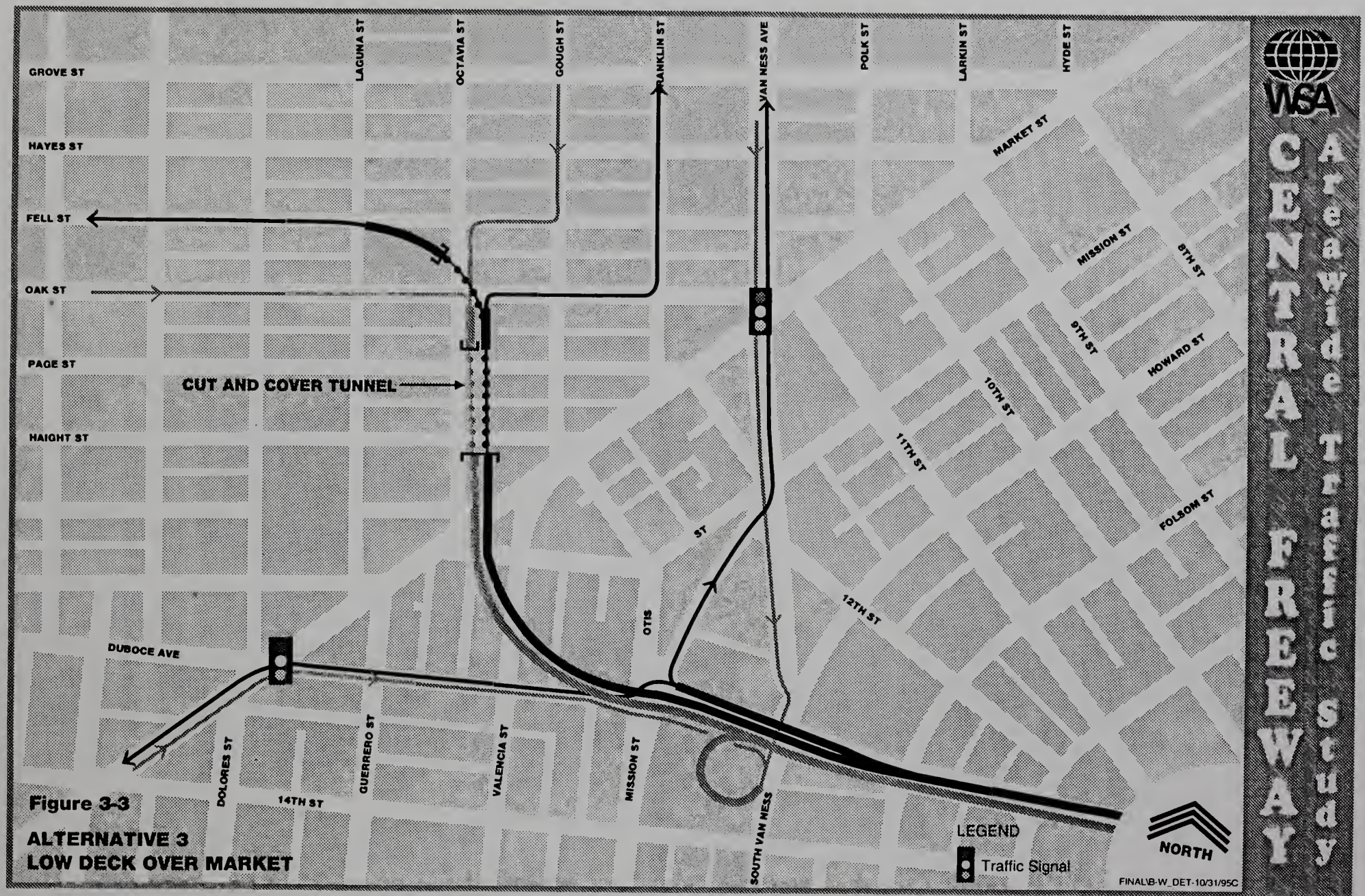

Figure 3-3

ALTERNATIVE 3
LOW DECK OVER MARKET

Figure 3-4

ALTERNATIVE 4
DEEP TUNNEL UNDER MARKET

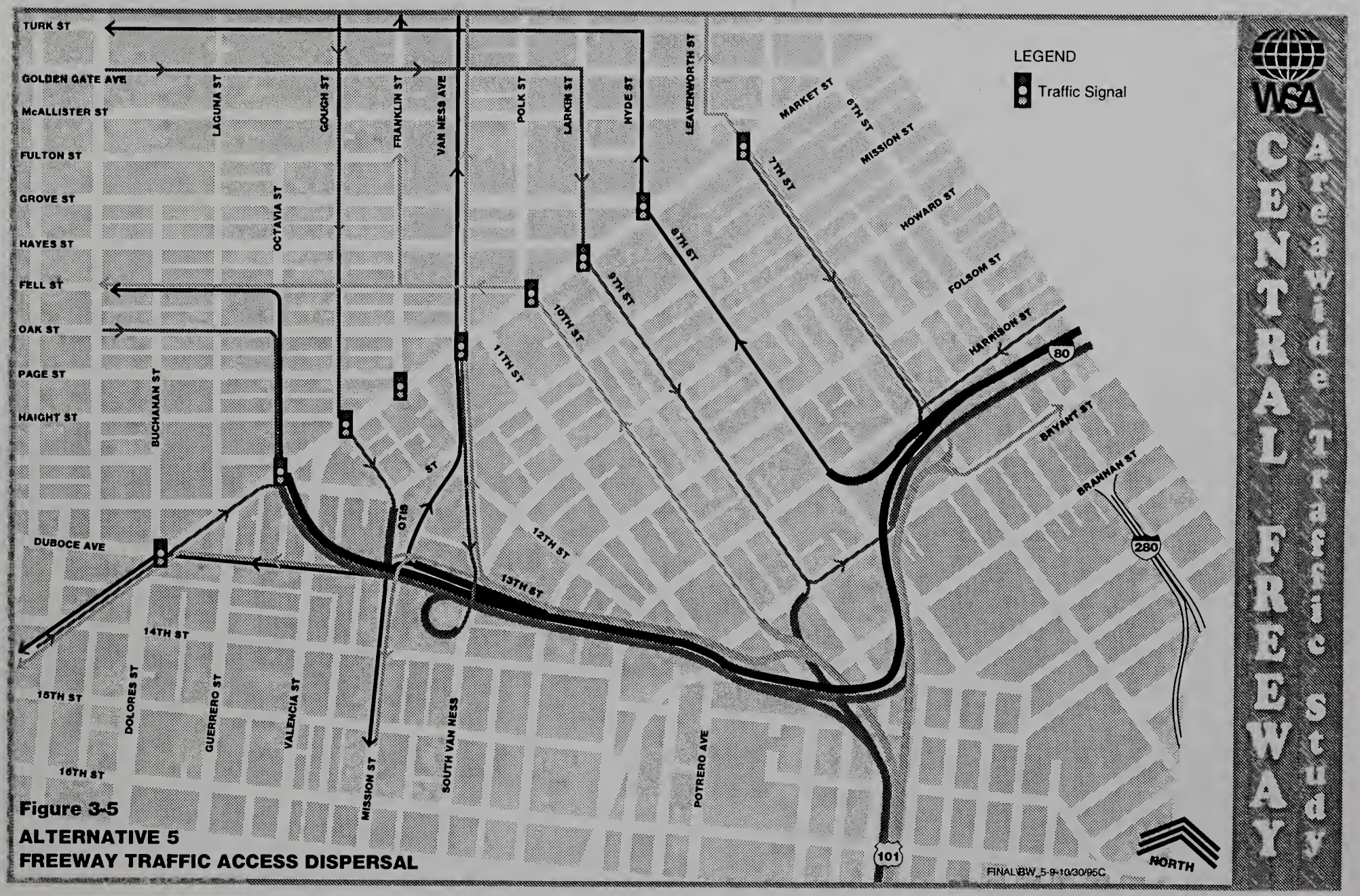

Figure 3-5
ALTERNATIVE 5
FREEWAY TRAFFIC ACCESS DISPERSAL

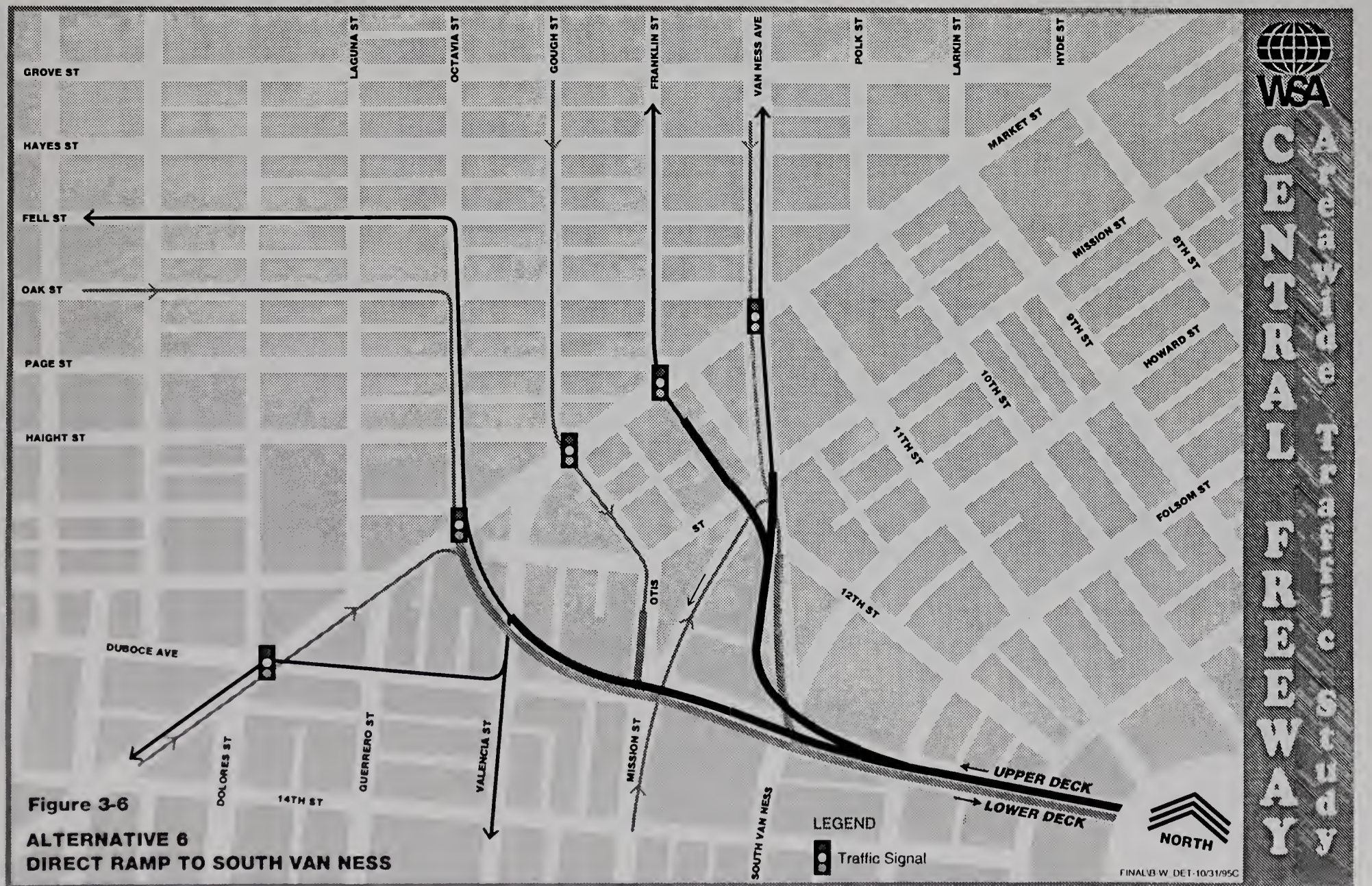

Figure 3-6

ALTERNATIVE 6
DIRECT RAMP TO SOUTH VAN NESS

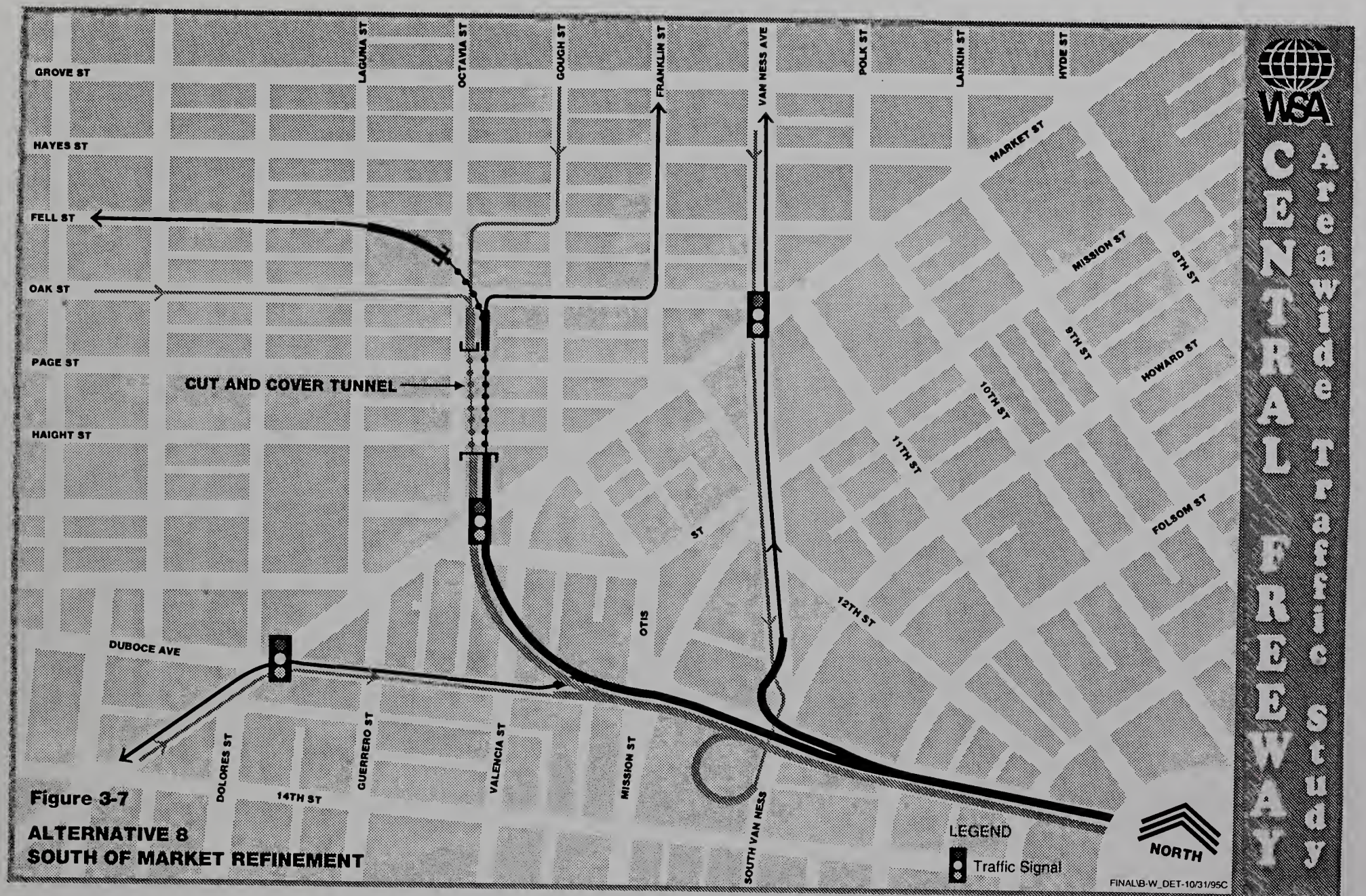

Figure 3-7

ALTERNATIVE 8
SOUTH OF MARKET REFINEMENT

Figure 3-8
ALTERNATIVE 9
OTIS/DUBOCE TERMINUS

4. TRAFFIC ANALYSIS

INTRODUCTION

Traffic analysis is a key to evaluating the various alternatives proposed for the Central Freeway corridor. An important requirement for any solution is its ability to accommodate traffic in the corridor while enhancing the quality of life in adjacent neighborhoods. Consequently, a major part of the overall analysis was devoted to understanding current traffic in the area and how it would readjust under the various alternatives.

Detailed analyses are contained in Technical Memo #4 on Current Traffic and Technical Memorandum #6 on Traffic Analysis.

Four important features of traffic were used to analyze the alternatives:

1. Traffic volumes on the Central Freeway and its ramps;
2. PM peak hour traffic volumes on study area arterials;
3. An analysis of traffic crossing Market Street and its relationship to available capacity; and
4. Freeway queuing characteristics.

To obtain these data, the study utilized a simulation model developed for the Federal Highway Administration called CORFLO. Traffic is assigned paths through the street network based on minimum travel time routes. The model constantly adjusts travel speed on individual street segments as traffic volumes begin to reach the capacity of the streets. The adjustments to speed and to volume assignments consider traffic signal timings, pedestrian and bus impacts on capacity as well as intersection turning movements.

The Central Freeway network for the model is roughly bounded on the north by McAllister Street, on the south by Fourteenth and Bryant Streets, on the east by Seventh Street, and on the west by Laguna and Guerrero Streets. Market Street runs diagonally through the study area and roughly bisects it into two halves. The model network includes all freeway mainline sections, connectors and ramps, all major surface streets and some minor streets. Origin-destination patterns of motorists using study area streets were defined based on travel patterns estimated by the Metropolitan Transportation Commission's (MTC) regional traffic model.

Data are tabulated for the project alternatives as follows:

Alternative 1: Covers the existing conditions as well as Alternative 1 (Double-Deck Retrofit) and Alternative 2 ("Hybrid" Single-Deck Retrofit) assuming that the Oak-Fell ramps are unchanged for these alternatives;

Alternative 3: Covers Alternative 3 (Low-Deck) and Alternative 4 (Deep Tunnel);

Alternative 5: Covers Alternative 5 (Freeway Traffic Dispersal/Surface Street Reversal);

Alternative 6: Covers Alternative 6 (South Van Ness Corridor Direct Ramps);

Alternative 8: Covers Alternative 8 (South of Market Refinement); and

Alternative 9: The model was not run for Alternative 9.[1]

Current traffic volumes were used to analyze alternatives because the study area is a development-mature area with traffic capacity limitations caused by the major bridges feeding traffic into and out of the study area. Traffic is unlikely to increase or decrease significantly in the foreseeable future within the study area. This assumption is consistent with assumptions in the Metropolitan Transportation Commission (MTC) model.

FREEWAY VOLUMES

Figure 4-1 describes the average weekday PM peak hour traffic volumes on the Central Freeway and its ramps. Key features shown in Figure 4-1 include:

- A total of 5,400 (2,800 + 2,600) vehicles per hour (vph) crossing above Market Street to/from the Oak/Fell Street ramps;

- A pronounced orientation of Central Freeway traffic towards US-101 South 5,200 (2,500 + 2,700) vph (64 percent) versus towards the Bay Bridge 2,900 (1,700 + 1,200) vph (36 percent);

Observation of traffic flow indicates that the traffic volume on the Central Freeway is reduced when traffic on the James Lick Freeway or I-80 is congested. For example, traffic backups due to Bay Bridge congestion sometimes impede northbound traffic on the James Lick Freeway destined for the

(1) Traffic data for a model run made to replicate conditions during construction were used to develop limited traffic data for Alternative 9.

Central Freeway. Similarly, congestion at the Central Freeway southbound merge onto the James Lick Freeway or at Hospital Curve sometimes backs up traffic coming south on the James Lick Freeway impedes the volume of traffic from the Bay Bridge which can enter the Central Freeway.

The project alternatives would redirect traffic flows in substantially different ways. Figures 4-2 through 4-6 present the CORFLO model forecast PM peak hour traffic volumes for the study area freeway network. A comparison of CORFLO model forecasts for Alternative 3 (Low Deck) to Alternative 1 (Base Case) indicates that about 750 more peak hour vehicles would be attracted to the Central Freeway crossing above Market Street. Under Alternative 3, more traffic would be attracted to the Gough/Franklin corridor and away from the Oak/Fell corridor. Under Alternative 3, traffic using the Seventh, Eighth, Ninth and Tenth Street ramps would increase slightly, while traffic using the South Van Ness Avenue on-ramp and the Mission Street off-ramp would decrease.

Comparing Alternative 5 (Freeway Traffic Dispersal) to the Base Case indicates that traffic volumes would increase on the new South Van Ness Avenue off-ramp and would decrease at the Mission Street off-ramp and the South Van Ness Avenue on-ramp. About 40 percent of the Central Freeway off-ramp traffic approaching the study area on northbound Highway 101 would exit at South Van Ness Avenue and 60 percent would exit onto Tenth Street. Currently, about 40 percent of this traffic exits at Ninth Street.

Comparing Alternative 6 (Direct Van Ness Corridor Ramps) to the Base Case indicates that about 60 percent of the northbound traffic on the Central Freeway would use the new South Van Ness Avenue/Franklin Street ramp. The "Octavia Street Boulevard," Otis Street and South Van Ness Avenue on-ramps would each serve about 20 percent of the traffic.

With a signalized intersection at Market Street in Alternative 8, the model shows approximately 4,000 peak hour two-way vehicles crossing Market Street, a decrease of 25 percent from the base case. About 2,200 would exit at the proposed South Van Ness and Duboce Avenue ramps, twice as many as would use the Mission Street off-ramp in the base case.

TRAFFIC ON ARTERIAL STREETS

Figures 4-7 through 4-10 describe the relative changes forecast for surface street traffic compared to the CORFLO Base Case forecasts. The changes were categorized into five ranges:

- 50 percent or more reduction in PM peak hour traffic;
- 20 to 49 percent reduction in traffic volume;
- No Change (less than a 20 percent increase or reduction);
- 20 to 49 percent traffic increase; and
- More than a 50 percent traffic increase.

As would be expected, Alternatives 3 and 8 would add traffic to the Gough/Franklin corridor including the Oak/Fell links to this corridor. Alternatives 5 and 6 generally increase traffic volumes on surface streets all over the study network by diverting current freeway traffic onto the surface streets.

MARKET STREET CROSSING RESERVE CAPACITY ANALYSIS

An important planning issue is the traffic implication of demolishing the Central Freeway and not rebuilding it across Market Street. Initially, current traffic volumes were studied to determine the capacity available for additional through traffic crossing Market Street during the weekday PM peak hour. Then the amount of traffic estimated to be crossing Market Street under the various alternative was estimated. Cross-Market Street capacity was estimated by a three-step process:

1. The maximum saturation flow rate per traffic lane was estimated based on surveys at each intersection;

2. The current amount of traffic signal "green time" allocated to cross Market Street traffic was obtained from City records; and

3. Adjustments were made to recognize capacity losses related to turning traffic delays.

The reserve capacity for all northbound and southbound through traffic was compiled separately and compared to the total capacity. As shown in Table 4-1, the northbound through traffic crossing Market Street has a total reserve capacity of 880 vehicles per hour (vph) or seven percent of total capacity. Similarly, the southbound through traffic crossing Market Street has a total reserve capacity of 760 vph or seven percent of total capacity.

Traffic volumes crossing Market Street for the four project alternatives were tabulated just north and south of Market Street to eliminate comparative complexities related to turn movements. The volume of traffic crossing Market Street northbound and southbound at these points was divided by the number of traffic lanes available to cross.[2] Figure 4-11 shows the vehicles/lane crossing Market Street relative to the Base Case alternative. It shows a five percent traffic reduction per lane for Alternative 3, and increases of from 18 to 40 percent for Alternatives 5-9. Since only about seven percent of total surface street capacity crossing Market Street is unused, increasing traffic demands of Alternatives 5-9 would provide less system tolerance for accommodating traffic accidents, double parking, truck loading and construction blockages.

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(2) Although traffic modelling was not performed for Alternative 9, this number was derived by dividing the amount of traffic forecast to cross Market Street during the construction period for Alternatives 3 and 8 (when Octavia Street would be closed) by the number of lanes crossing Market Street in Alternative 9.

Table 4-1
SUMMARY OF RESERVE CAPACITY OF THROUGH TRAFFIC CROSSING MARKET STREET
WEEKDAY PM PEAK HOUR

Cross Street	Direction	No. of Through Lanes	Total Capacity (vph) /a/	Approach Volume (vph) /b/		Reserve Capacity (vph) /d/	Percent RC of Total Capacity	Remark
				Thru Movement	Total /c/			
Central Freeway	NB	2	2,800	2,800	2,800	0	0 %	At Capacity
Duboce - Buchanan	NB	1	800	230	240	200	45 %	
Guererro - Laguna	NB	2	770	490	490	280	36 %	
McCoppin - Octavia	NB	1	400	320	320	80	20 %	
Valencia & South Gough - Market-Franklin	NB	2	490	580	1,010	0	0 %	At Capacity
South Van Ness - Van Ness	NB	3	1,890	1,810	1,970	0	0 %	At Capacity
Ninth - Hayes	NB	3	1,860	1,790	1,930	0	0 %	At Capacity
Ninth - Larkin	NB	2	1,460	1,480	1,480	0	0 %	At Capacity
Seventh	NB	3	1,770	1,420	1,620	150	8 %	
Sixth - Taylor-Turk	NB	2	800	630	630	170	21 %	
	Northbound Total		**13,200**	**11,550**	**12,490**	**880**	**7 %**	
Central Freeway - James Lick Freeway	SB	2	2,600	2,600	2,600	0	0 %	At Capacity
Laguna - Guererro	SB	1	430	290	360	80	16 %	
Octavia - McCoppin	SB	1	240	110	250	0	0 %	At Capacity
Gough - Market-Valencia	SB	1	540	480	480	80	17 %	
Gough - South Gough-Otis	SB	2	490	580	660	240	27 %	
Van Ness - South Van Ness	SB	3	1,680	1,260	1,550	130	8 %	
Fell - Tenth	SB	2	680	610	610	80	12 %	
Polk - Tenth	SB	2	1,020	990	990	30	3 %	At Capacity
Grove - Eighth	SB	1	160	120	480	0	0 %	At Capacity
Hyde - Eighth	SB	3	1,620	1,490	1,660	0	0 %	At Capacity
Golden Gate - Sixth	SB	2	890	730	730	150	17 %	
	Southbound Total		**10,750**	**9,260**	**10,050**	**760**	**7 %**	

/a/ Total Capacity was determined using saturation flow rate, signal timing, clearance, and turn lane factors (adjustment for vehicle speeds and pedestrian activities).
/b/ All volumes are rounded to the nearest 10 vehicles per hour.
/c/ Total approach volume includes traffic volumes on the thru lanes, shared left-thru lane and shared thru-right lane, not exclusive left or right turn lanes.
/d/ Reserve Capacity (RC) = Total Capacity minus Total Approach Volume

Wilbur Smith Associates; July 1995

FREEWAY QUEUING CHARACTERISTICS

A major traffic concern is that alternatives which shorten the length of the Central Freeway would impact traffic flow on the James Lick Freeway. Specifically, that northbound traffic on the Central Freeway would stack back into the mainline James Lick Freeway and disrupt Bay Bridge and U.S. 101 Peninsula freeway traffic.

Central Freeway queuing (traffic stacking or congestion) data were collected using field observations and video tapes filmed during a weekday and weekend afternoon in April 1995. In addition, several video tapes of the James Lick Freeway/Bay Bridge interchange traffic were obtained from Caltrans. The observations indicate that weekday queuing on the Mission Street off-ramp generally begins at 4:30 PM. From then on, traffic and queuing conditions gradually worsen until 6 PM, when queues usually begin to taper off. The average queue length during the PM peak period was observed to be about 40 vehicles or 1,000 feet in length on the curb lane. At some points during the peak period, queues from the Mission Street off-ramp can be 60 vehicles in length, which back up onto the Central Freeway, and combine with the queues from the Fell Street off-ramp.

On the Fell Street off-ramp, queues usually begin to build up at 4:00 PM and reach an average queue length of about 55 cars per lane (1,400 feet) by 5:00 PM. On relatively uncongested days, the queue does not get much longer than this. On at least half of the weekdays, the queue continues to build up until around 6:00 PM at which time it usually levels off. The maximum queue observed for the Fell Street off-ramp was more than 85 vehicles per lane (2,100 feet). At that time, the queue extended from the stop bar at the Fell/Laguna intersection to 600 to 900 feet southeast of the Mission Street off-ramp.

Output from the CORFLO model was used to estimate potential queues on the Freeway under the various alternatives.[3] The model output indicates vehicle densities and speeds which were used to identify areas of stop-and-go driving on the Freeway.

The output indicated base case queues that were roughly similar to those observed on the Freeway, with backups in the southbound direction in the PM peak hour extending as far back as the intersection of the ramps coming into the Freeway from I-80 and 101. No backups were identified for Alternative 3.

Alternative 8 was run twice; once with two and once with three through lanes in each direction on the Freeway. With two lanes, speeds in the 10-15 mile per hour range indicated stop-and-go conditions but not complete stoppage all the way back to the mainline James Lick Freeway. With

(3) An error in the interface between FREFLO and NETFLO modules of the basic CORFLO model that impacted queuing analysis but not traffic assignment was corrected by the program developer at the end of the Study. Therefore, only limited queuing analysis on the base case and Alternatives 3 and 8 was done. More extensive analysis should be performed in the environmental phase of the project.

three lanes, speeds in this area increase to 15-20 mph. Additional traffic analysis should be performed in the environmental phase to determine how the Freeway/Market intersection can be configured to improve traffic flow.

It should be noted that these figures express ideal conditions. Any incidents would cause additional backups. The model does allow examining incidents and these impacts could be reviewed in subsequent evaluations.

LEVEL-OF-SERVICE AT KEY STUDY AREA INTERSECTIONS

Another measure of traffic impact of the alternatives is the level of service that results at intersections in the study area. Fifteen key intersections that appeared to be most heavily impacted by the alternatives were selected for analysis.

The analysis used the Circular 212 Planning method to calculate the ratio of volume-to-capacity (V/C) ratios for the intersections that are shown in Table 4-2. Intersections with a volume-to-capacity ratio of less than 0.9 are at level-of-service (LOS) A-D, generally indicating satisfactory performance. Intersections having a level-of-service ratio from 0.9 to 1.0 are rated at LOS E, operating at close to maximum capacity and experiencing frequent delay. Intersections with a v/c greater than 1.0 are at LOS F, indicating significant delay on all or most approaches to the intersection.

Please note that this analysis is intended to provide a general picture of the traffic impact of each alternative and should not be used as a definitive rating of individual intersections. The Circular 212 Planning method does not consider signal timing, and other mitigation activities such as turn prohibitions, other than those provided in the general network delineation. Additionally, the fifteen selected intersections reflect only a small sample of the over 100 intersections in the study area.

Table 4-2

LEVEL-OF-SERVICE AT SELECTED INTERSECTIONS FOR DIFFERENT ALTERNATIVES
Central Freeway - Phase II

Intersection	Base (Alt 1/2)		Alt 3		Alt 5		Alt 6		Alt 8	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Fell / Laguna	1.04	F	0.80	C	1.04	F	0.96	E	0.80	C
Fell / Octavia	0.51	A	0.88	C	0.82	D	0.78	C	0.53	A
Oak / Laguna	0.91	E	0.68	B	0.71	C	0.70	B	0.69	B
Oak / Octavia	0.41	A	0.69	D	0.70	C	0.65	B	0.69	B
Market / Octavia / McCoppin	0.86	D	0.76	B	0.98	E	0.96	D	1.13	F
Market / Gough	0.81	D	0.88	D	0.87	D	0.96	D	0.78	C
Market / Franklin	0.81	D	0.76	C	0.87	D	1.08	F	0.77	C
Market / Van Ness	0.82	D	0.71	C	0.90	B	0.62	B	0.90	D
Mission / South Van Ness	0.98	E	0.88	C	0.70	B	1.03	F	0.91	F
Mission / Otis / Duboce	0.98	E	0.80	D	0.67	B	0.72	F	0.82	D
South Van Ness / 13th	0.90	D	0.89	D	0.98	D	0.78	D	0.87	D
Harrison / 9th	1.04	F	1.03	F	0.91	E	0.99	F	0.91	F
Harrison / 10th	0.86	D	0.87	D	0.85	E	0.96	D	0.99	F
Bryant / 9th	0.91	E	0.98	E	0.87	D	1.18	F	0.89	D
Bryant / 10th	0.85	D	0.86	D	0.65	B	0.77	E	0.87	D

Wilbur Smith Associates; November 1995

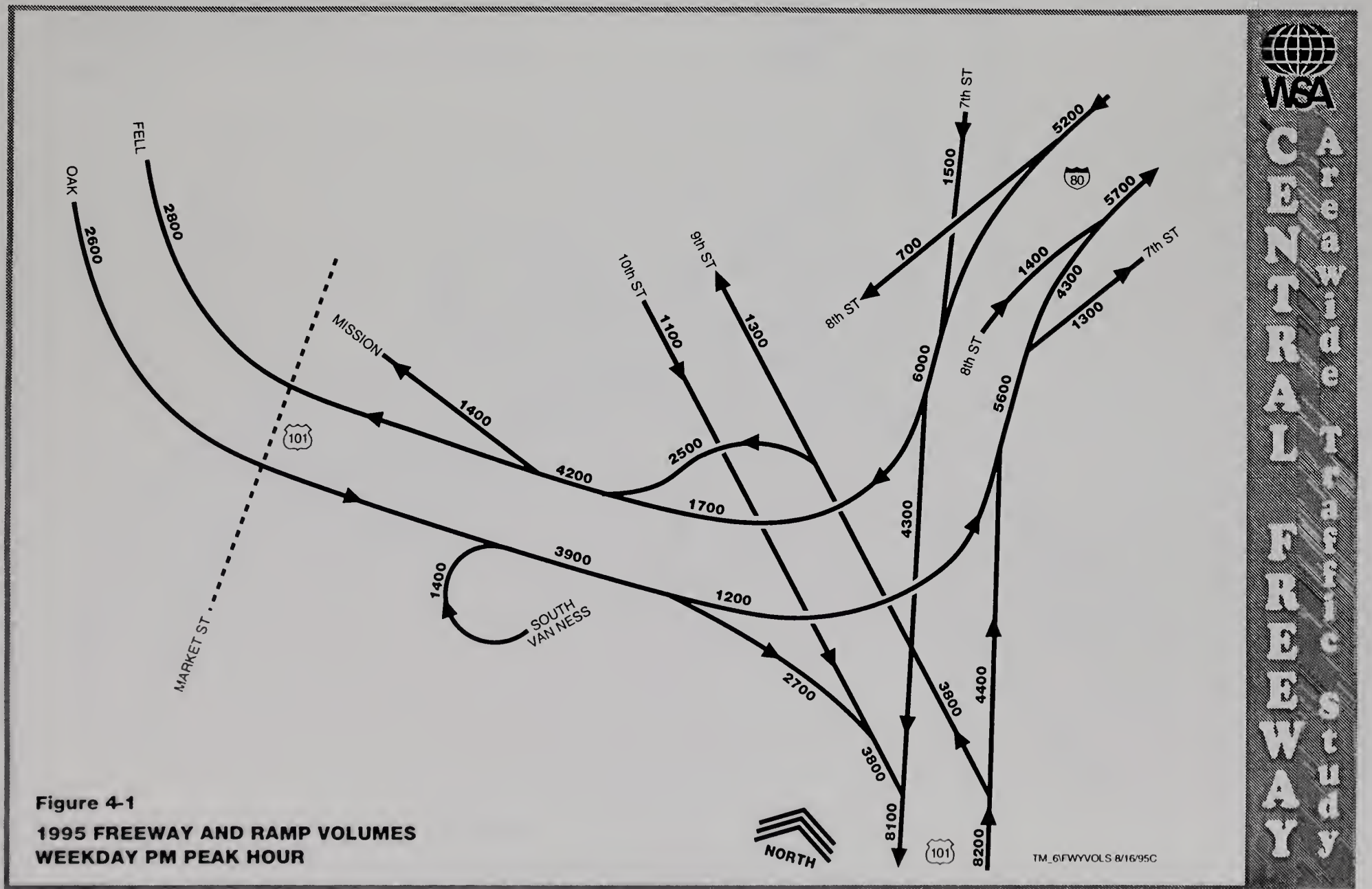


Figure 4-1

1995 FREEWAY AND RAMP VOLUMES
WEEKDAY PM PEAK HOUR

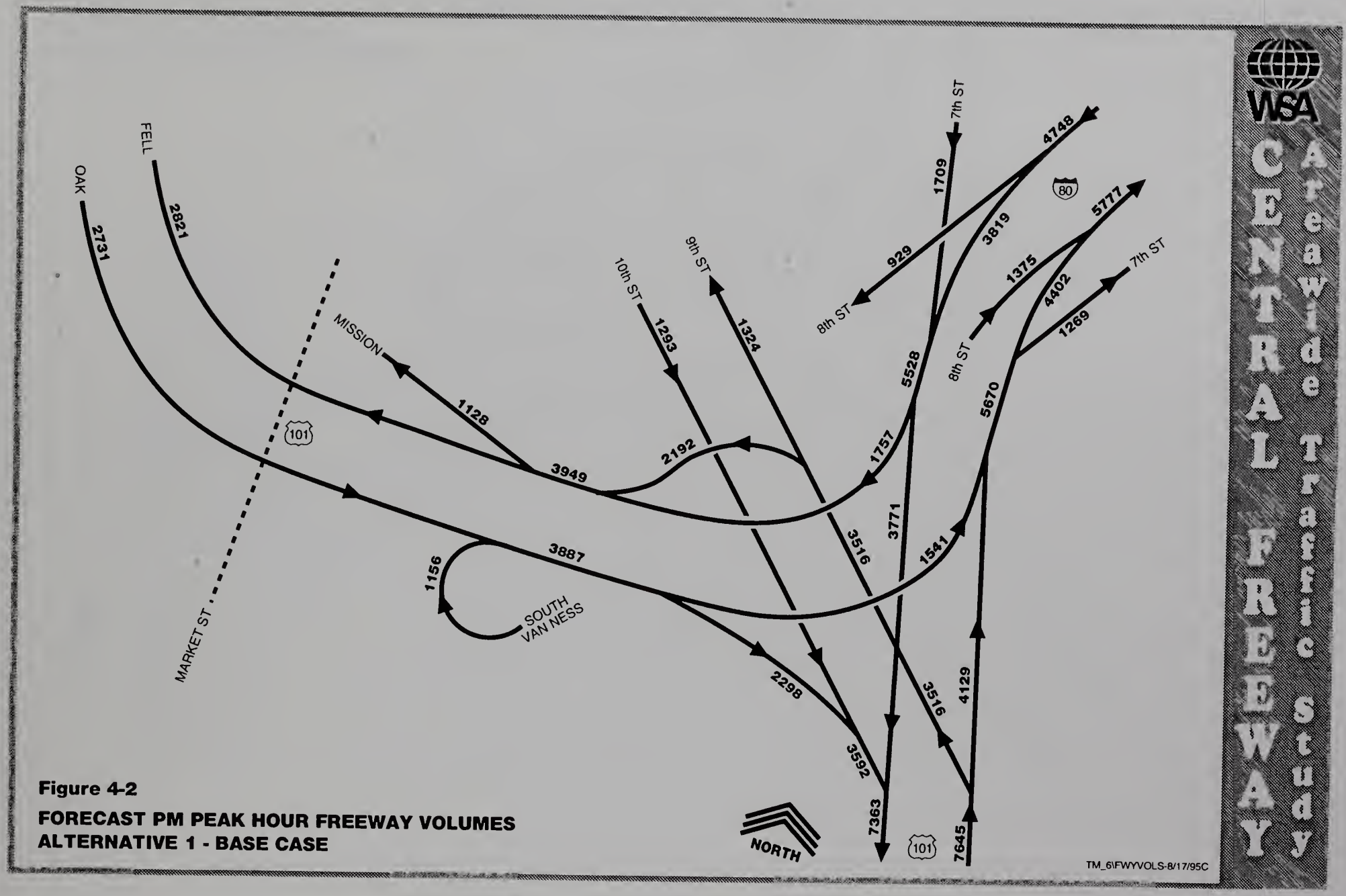


Figure 4-2

FORECAST PM PEAK HOUR FREEWAY VOLUMES
ALTERNATIVE 1 - BASE CASE

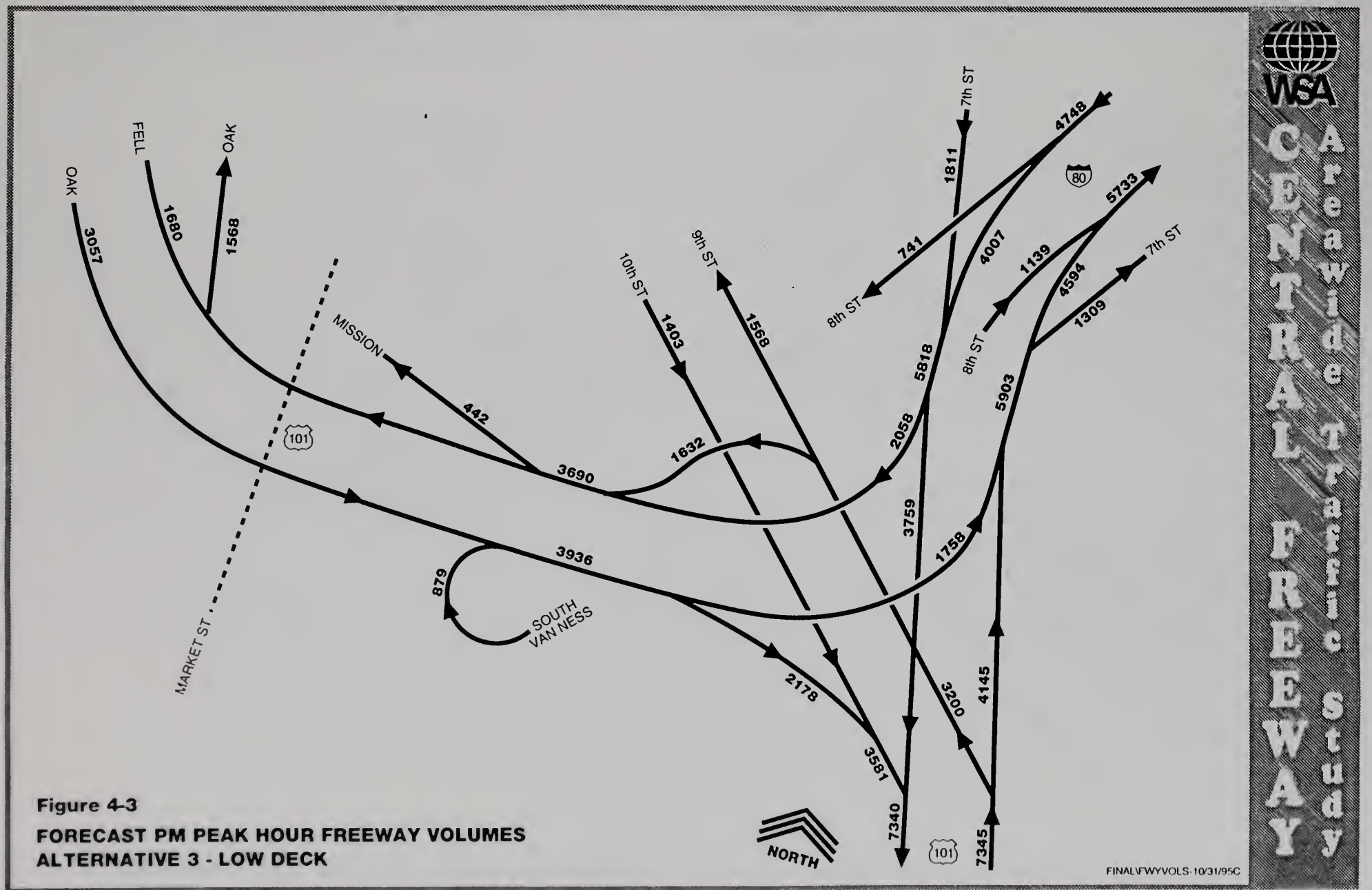


Figure 4-3

FORECAST PM PEAK HOUR FREEWAY VOLUMES
ALTERNATIVE 3 - LOW DECK

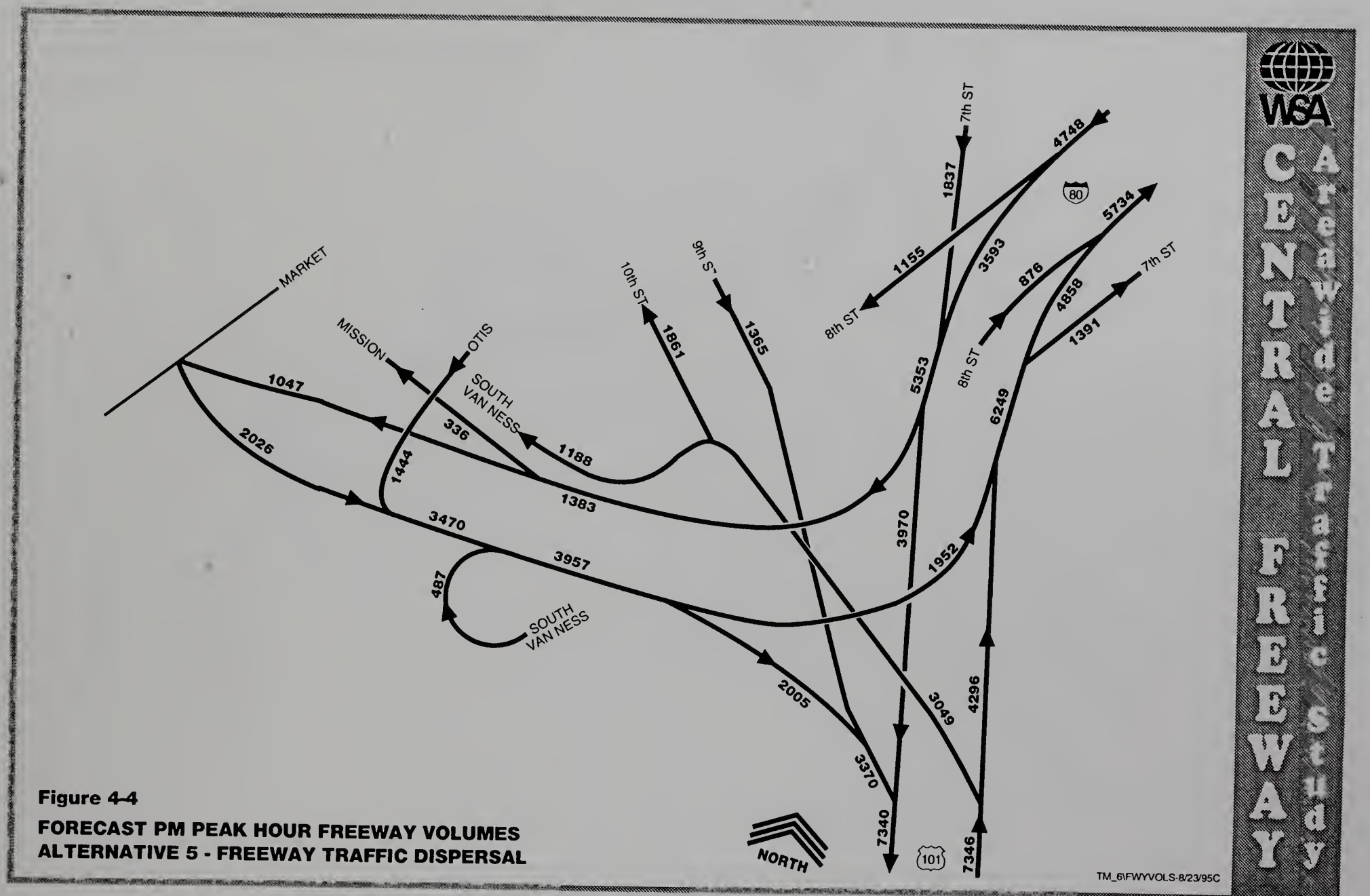


Figure 4-4

FORECAST PM PEAK HOUR FREEWAY VOLUMES
ALTERNATIVE 5 - FREEWAY TRAFFIC DISPERSAL

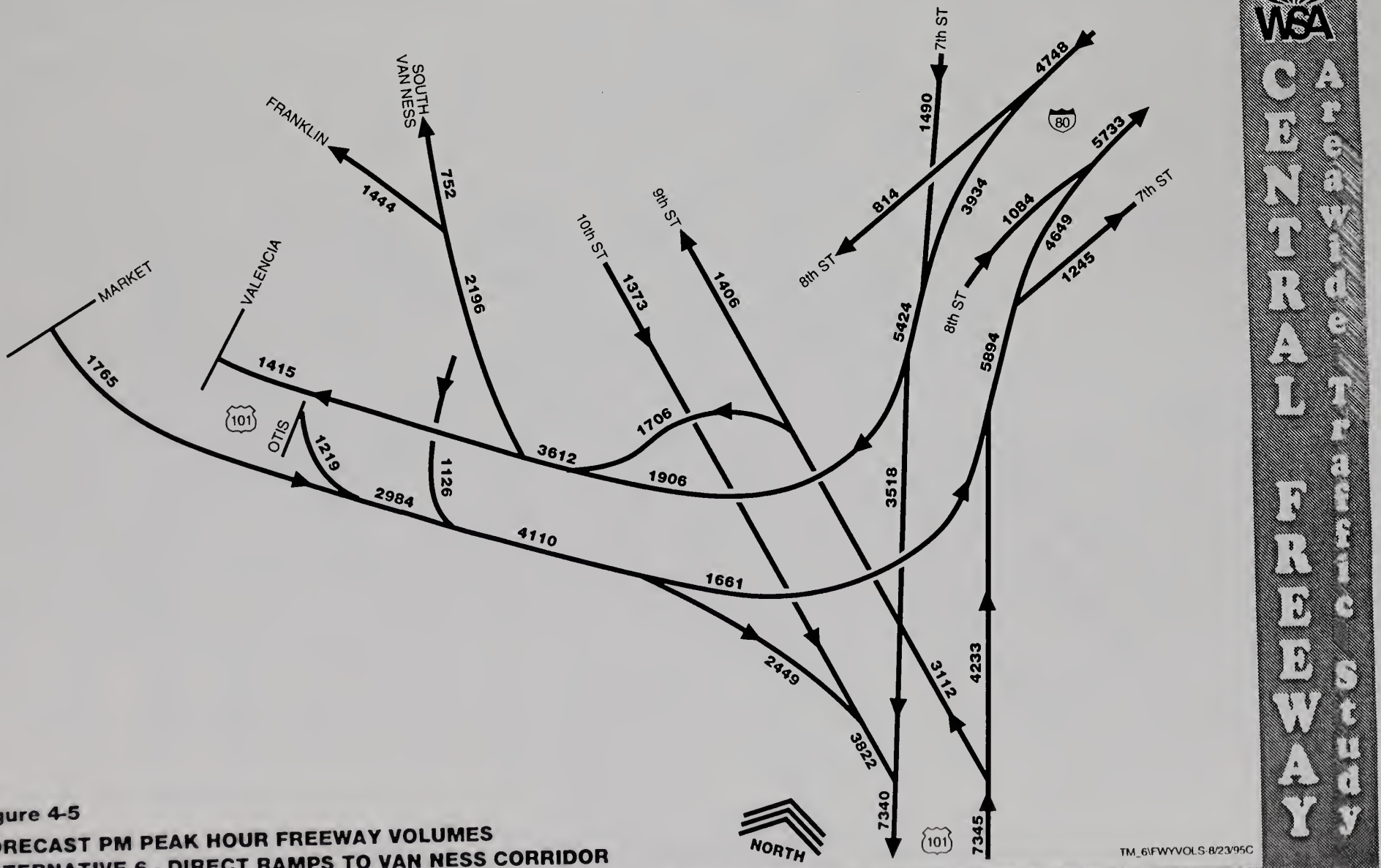


Figure 4-5

FORECAST PM PEAK HOUR FREEWAY VOLUMES
ALTERNATIVE 6 - DIRECT RAMPS TO VAN NESS CORRIDOR

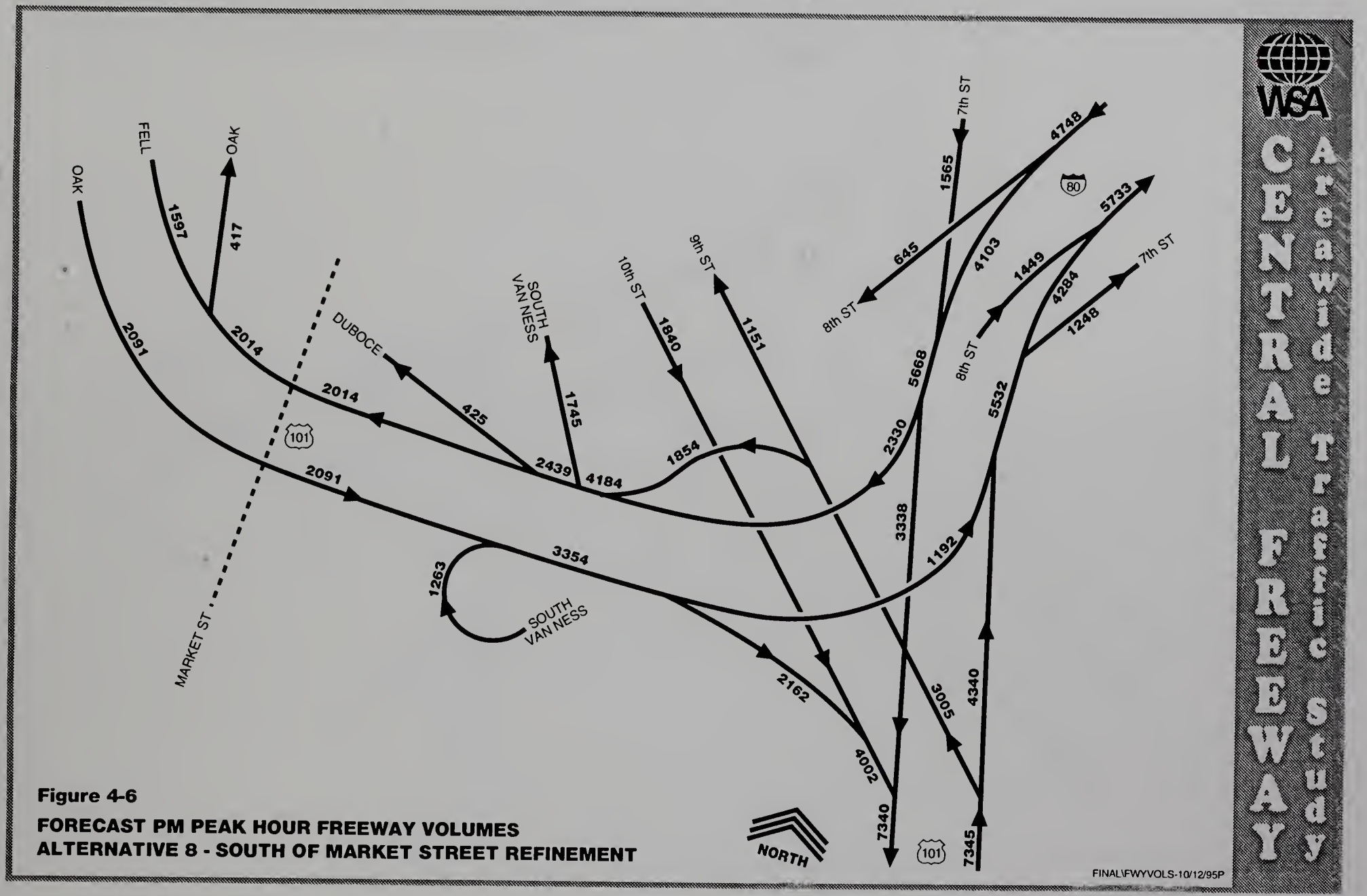


Figure 4-6

FORECAST PM PEAK HOUR FREEWAY VOLUMES
ALTERNATIVE 8 - SOUTH OF MARKET STREET REFINEMENT

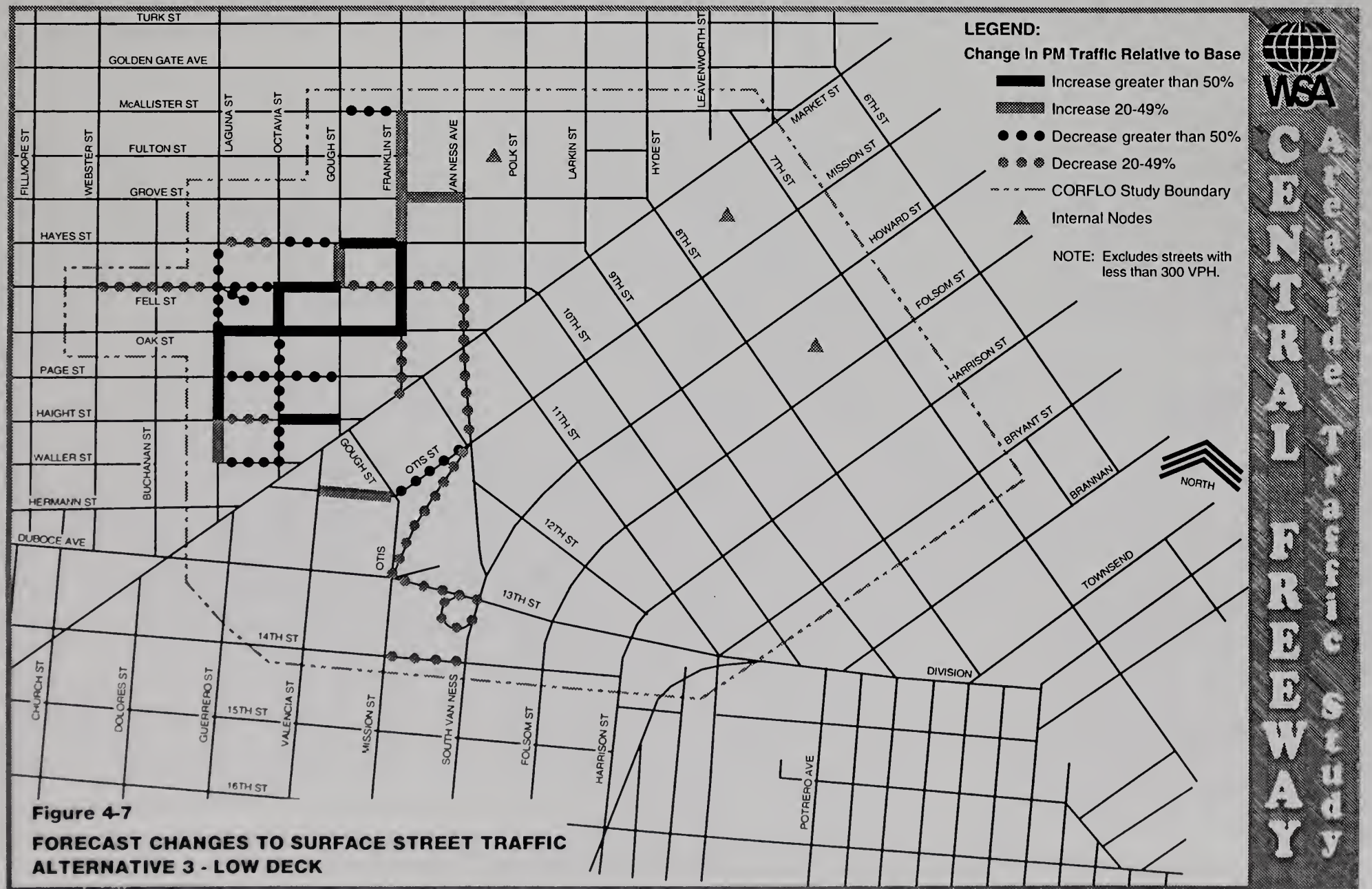


Figure 4-7

FORECAST CHANGES TO SURFACE STREET TRAFFIC
ALTERNATIVE 3 - LOW DECK

FINAL\CHANGES - 9/18/95P

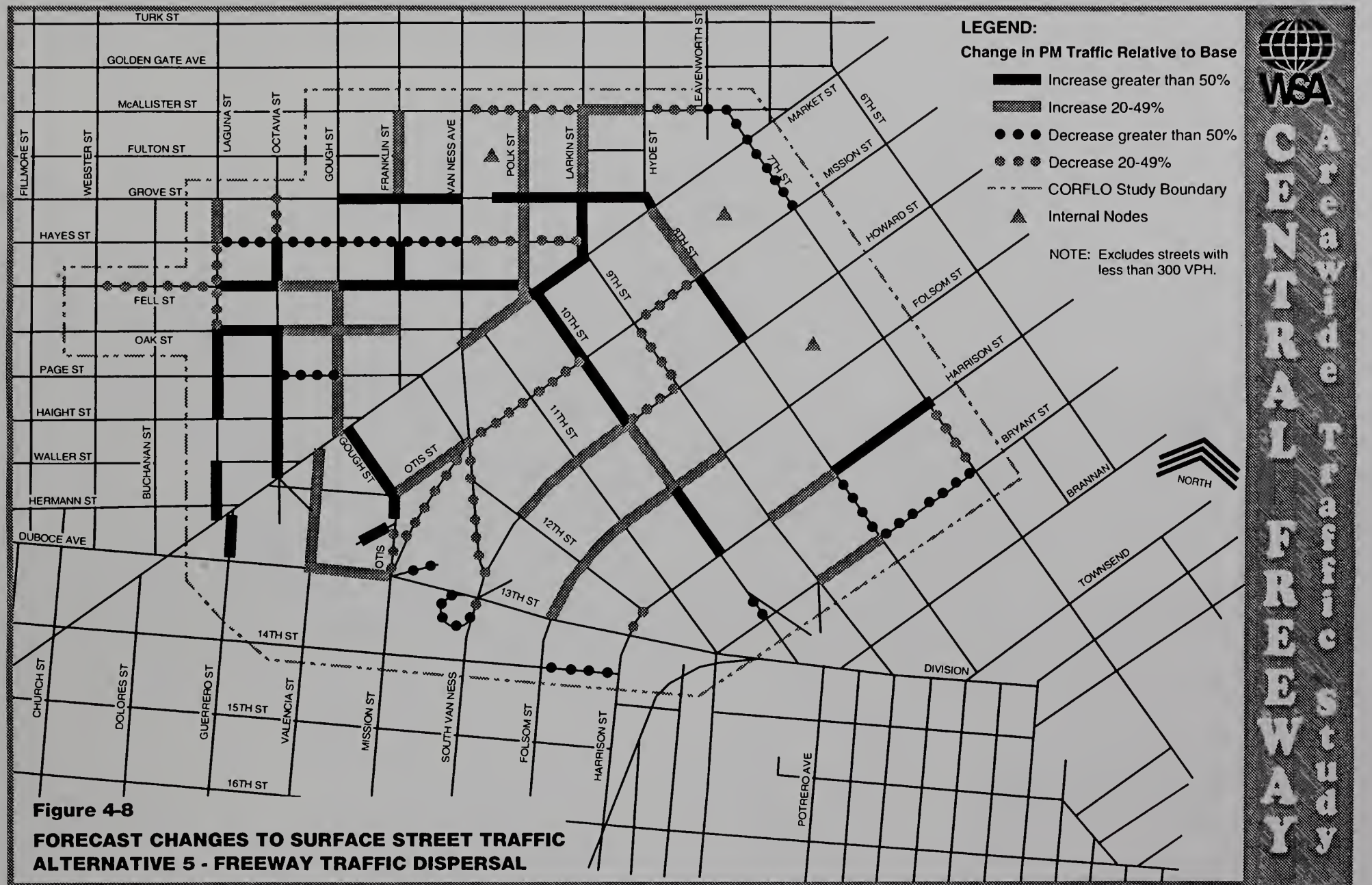


Figure 4-8

FORECAST CHANGES TO SURFACE STREET TRAFFIC
ALTERNATIVE 5 - FREEWAY TRAFFIC DISPERSAL

WSA

Areawide Traffic Study

CENTRAL FREEWAY

FINAL/CHANGES - 9/18/95P

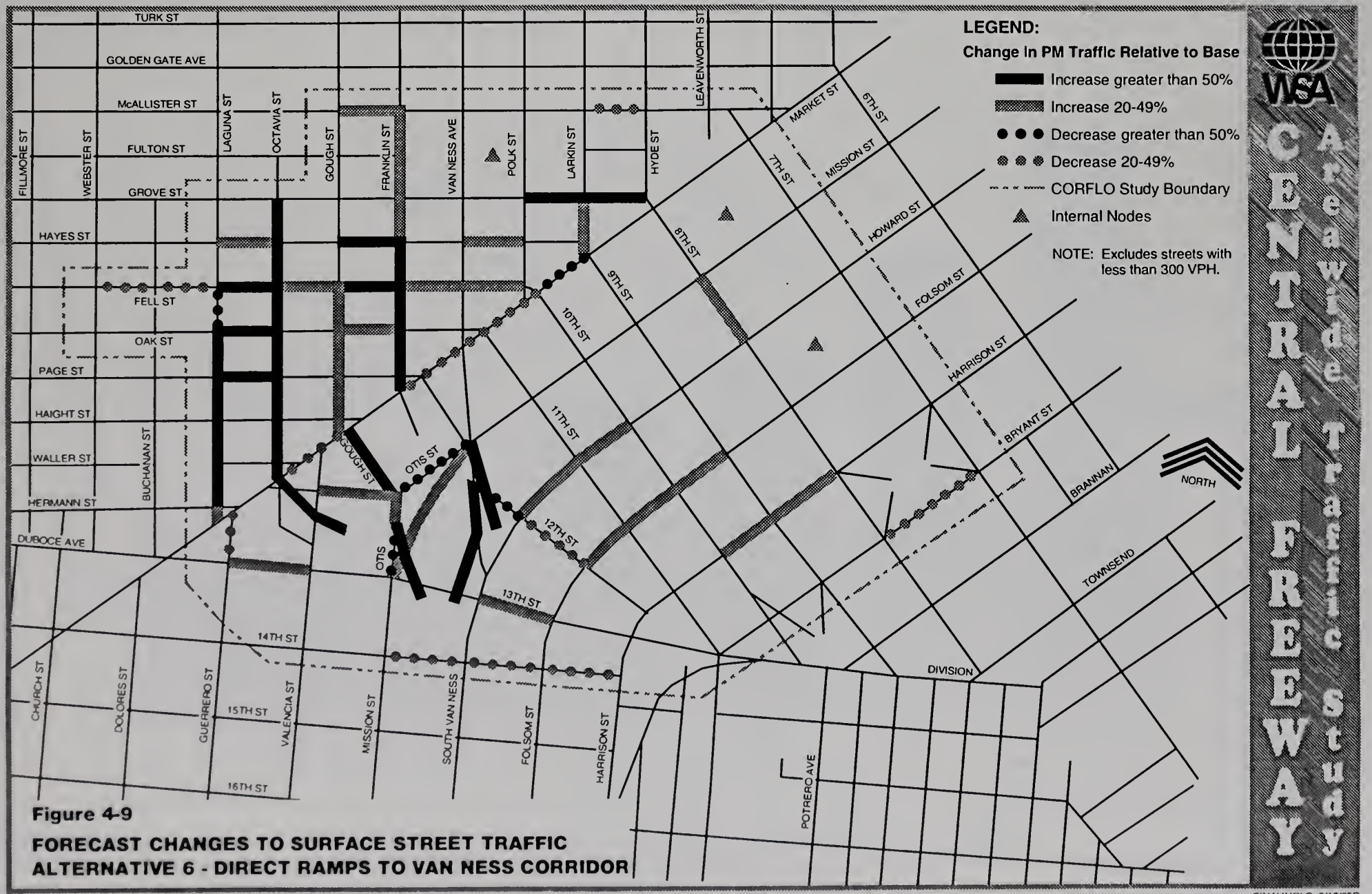


Figure 4-9

FORECAST CHANGES TO SURFACE STREET TRAFFIC
ALTERNATIVE 6 - DIRECT RAMPS TO VAN NESS CORRIDOR

FINAL\VOLS -9/18/95P

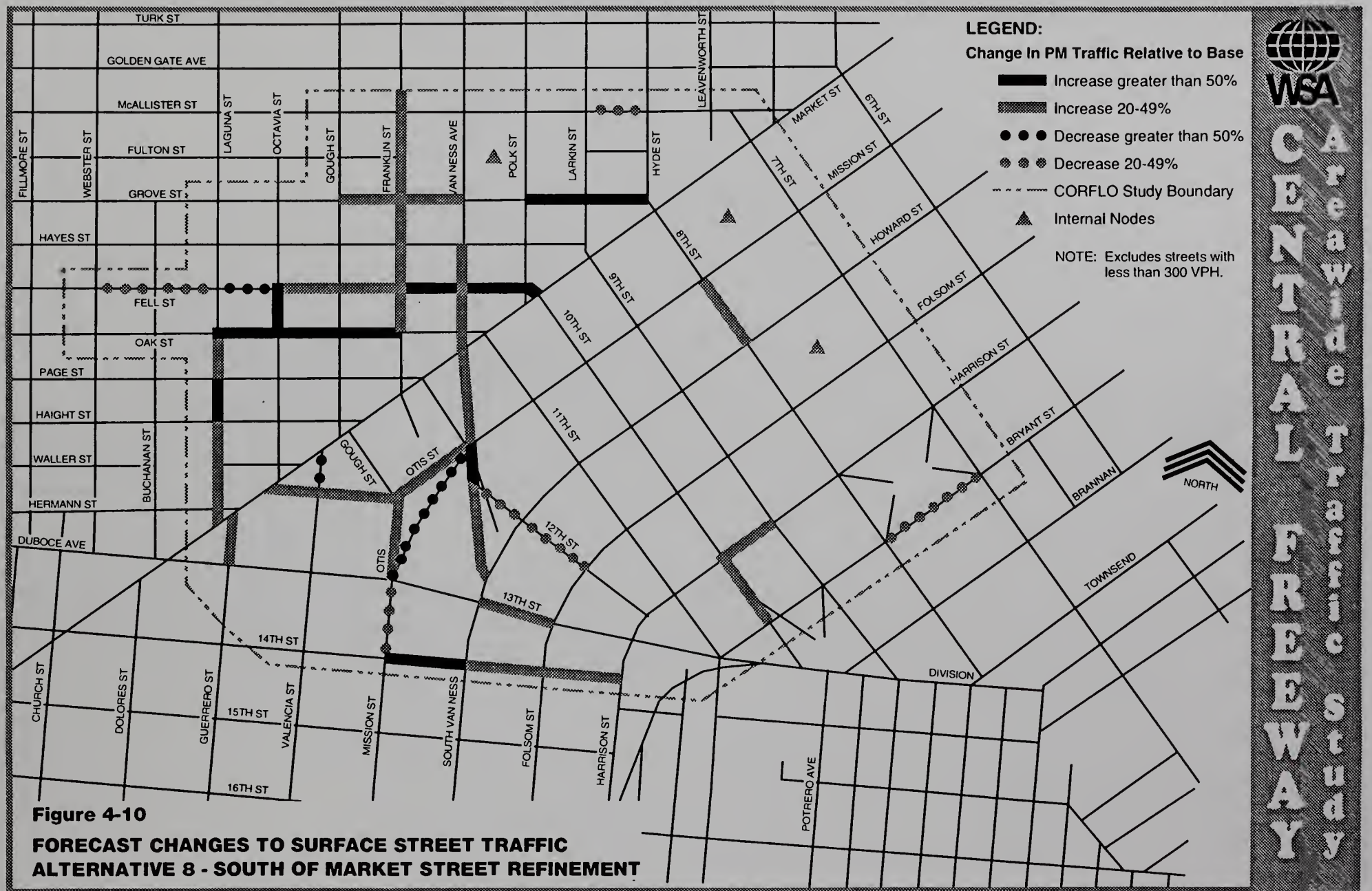


Figure 4-10

FORECAST CHANGES TO SURFACE STREET TRAFFIC
ALTERNATIVE 8 - SOUTH OF MARKET STREET REFINEMENT

FINAL/CHANGES - 10/12/95P

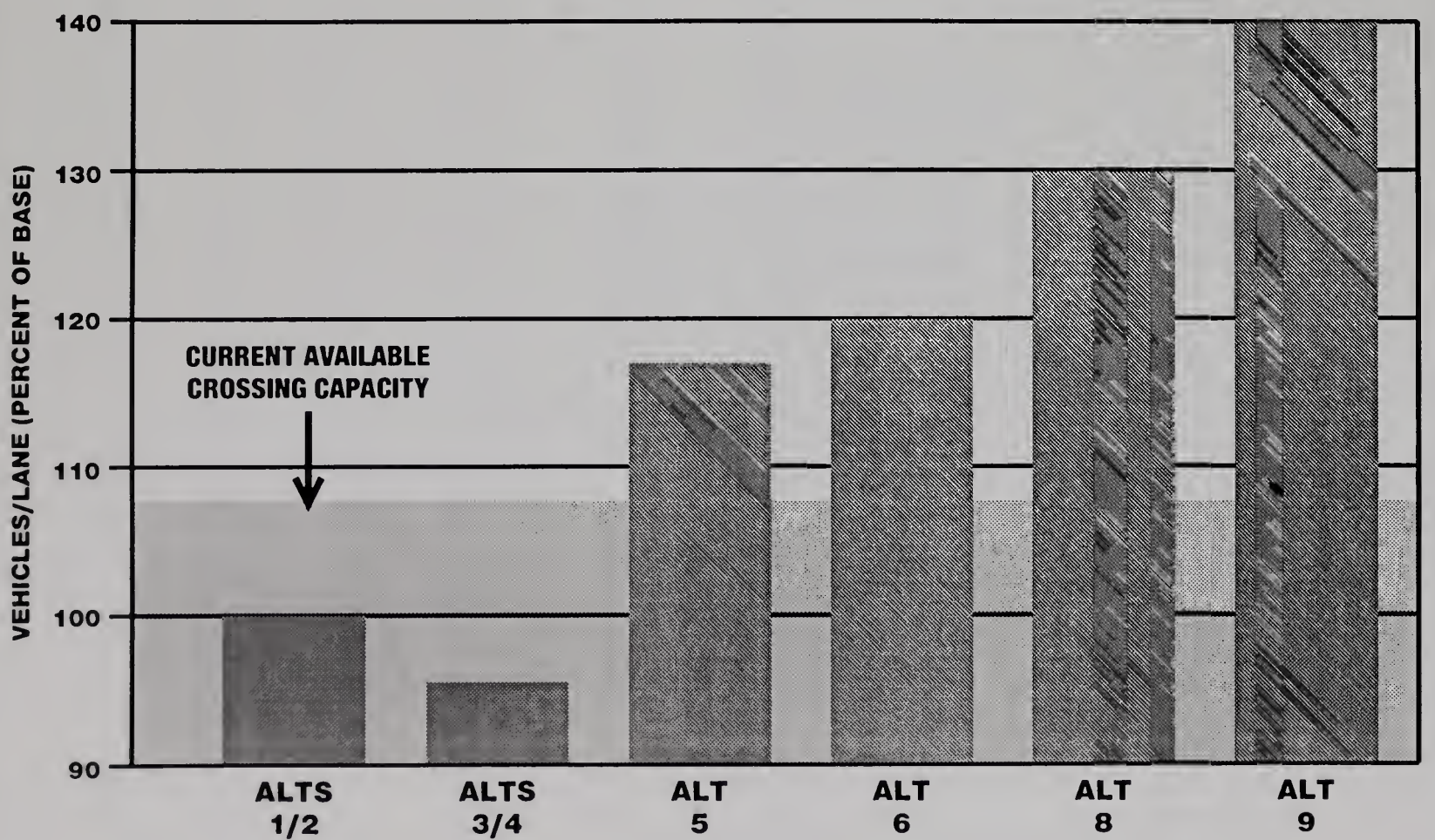


Figure 4-11

VEHICLES CROSSING MARKET STREET ON SURFACE IN PM PEAK HOUR

PHZ\FINAL\BW_VEHX-9/18/95C

WSA

CENTRAL FREEWAY

Areawide Traffic Study

5. EVALUATION OF ALTERNATIVES

INTRODUCTION

This chapter evaluates the alternatives described in Chapter 3 according to criteria developed by the Central Freeway Citizens' Advisory Task Force, supplemented by the Consultant. The evaluation is summarized in the attached evaluation matrix (Table 5-1) and is described in the text to provide source references and additional material where required. Quantitative factors such as cost are tabulated directly. Qualitative factors are indicated as follows, with a short written explanation as to why they were so rated:

(++)	=	Very positive
(+)	=	Positive
(•)	=	No significant impact
(-)	=	Negative
(--)	=	Very negative
(FF)	=	"Fatal Flaw"

Since different interested parties tend to have differing priorities, the criteria are neither prioritized nor weighted.

NOTES TO EVALUATION MATRIX (TABLE 5-1)

Visual Criteria

1. **Length of Elevated Structure:** This indicates how much of the existing elevated structure would remain or new elevated structure is created (using the freeway crossing of Bryant Street as the southern limit).

2. **Views down Market Street:** This measures the level of "openness" looking from west of the structure down to the Ferry Building.

3. **Octavia Street Corridor:** How views across and along the Octavia Street corridor between Market and Fell Streets are likely to be affected by the alternatives.

4. **Other Areas:** Alternatives 5, 6 and 8 require structures in areas outside the current freeway corridor. The impact of these structures is evaluated in the table.

Table 5-1
(Page 1 of 4)
ALTERNATIVES COMPARISON

Factor	(1) Double-Deck Retrofit	(2) "Hybrid" Retrofit	(3) Low Deck	(4) Deep Tunnel	(5) Street Reversal	(6) South Van Ness Ramp	(8) South of Market Refinement	(9) Otis/Duboce Terminus
Visual								
Length of Elevated Structure	old: 6,650 feet new: 0 feet	old: 4,140 feet new: 2,510 feet	old: 3,370 feet new: 2,020 feet	old: 2,880 feet new: 1,320 feet	old: 0 feet new: 4,900 feet	old: 0 feet new: 7,620 feet	old: 2,900 feet new:1,260 feet	old: 2,900 feet new: 700 feet
Views down Market St.	Worst (--)	Blocked (-)	Blocked (-)	Open (++)	Open (++)	Open (++)	Open (++)	(Open (++)
Octavia Corridor	Worst (--)	Better (-)	Open Cut (-) Partial Deck (+)	Best (++)	Surface (+)	Surface (+)	Open Cut (-) Partial Deck (+)	Surface (++)
Other Areas	Existing (•)	Existing (•)	Existing (•)	Less structure (+)	New ramp at Costco (-)	New elevated on S. Van Ness (--)	New ramp on S. Van Ness (-)	Less structure (+) South of Market
Neighborhood Impacts								
Hayes Valley	Splits Octavia Corridor (--)	Splits Octavia Corridor (--)	Can tie corridor together depending on design (+)	Ties neighborhood together (++)	Gets rid of structure Increases Octavia traffic (+)	Can tie corridor together depending on design (+)	Can tie corridor together depending on design (+)	Ties neighborhood together (++)
South of Market	Existing (•)	Existing (•)	Less traffic (+)	Minimal impact (•)	Increases traffic on Market St. (-).	Structure on S. Van Ness (-)	Minimal impact (•)	Much more traffic (--)
Tenderloin/Civic Center	Existing (•)	Existing (•)	Minimal impact (•)	Minimal impact (•)	Increases traffic (-).	Increases traffic (-)	Minimal impact (•)	Probably significant traffic increases (-)

(++) = Very positive; (+) = positive; (•) = no significant impact; (-) negative; (--) very negative; (FF) = fatal flaw.

Table 5-1
(Page 2 of 4)
ALTERNATIVES COMPARISON

Factor	(1) Double-Deck Retrofit	(2) "Hybrid" Retrofit	(3) Low Deck	(4) Deep Tunnel	(5) Street Reversal	(6) South Van Ness Ramp	(8) South of Market Refinement	(9) Otis/Duboce Terminus
Other Modes								
Market Street Transit	Minimal Impact (•)	Minimal Impact (•)	Minimal Impact (•)	Minimal Impact (•)	Impact to F Line only (-)	Impact to F Line only (-)	Impact to F Line only (-)	Not Available
Mission Street Transit	Existing (-) poor	Same as existing (-)	Reduces Mission St. traffic (+)	Reduces Mission St. traffic (+)	Reduces Mission St. traffic (+)	Adds traffic to S. Van Ness/Mission Inter-section (–)	Reduces Mission St. traffic (+)	Not Available
Haight/Page Streets	Existing (•)	Existing (•)	Existing (•)	Existing (•)	Existing (•)	Existing (•)	Existing (•)	Existing (•)
Changes to Current Transit	None (•)	Construction impacts (-)	Construction impacts (-)	Construction impacts (-)	Major (see text) (–)	Moderate (-) (see text)	Construction impacts (-)	Minor (-)
Compatibility with Proposed Transit	OK (•)	OK (•)	OK (•)	OK (•)	Reduces Van Ness traffic (+)	OK (•)	Increases Van Ness Traffic (-)	Not Available
Bicycle/Pedestrian	Existing (•)	Existing (•)	No significant impact (•)	No significant impact (•)	Increased traffic on Polk, Larkin, Market & Page Streets. (-)	Traffic increases & decreases on bike routes are fairly equal (•)	Adds major signifi-cant intersection at Market & Octavia (-)	Not Available
Traffic								
Vehicles/Lane Crossing Market Street At-Grade	389	389	370	370	459	468	507	544 (estimated)
Key Intersections at Levels of Service E&F	E - 4 F - 2	E - 4 F - 2	E - 1 F - 1	E - 0 F - 3	E - 3 F - 1	E - 2 F - 3	E - 3 F - 2	Not Available

(++) = Very positive, (+) = positive; (•) = no significant impact; (-) negative; (–) very negative; (FF) = fatal flaw.

Table 5-1
(Page 3 of 4)
ALTERNATIVES COMPARISON

Factor	(1) Double-Deck Retrofit	(2) "Hybrid" Retrofit	(3) Low Deck	(4) Deep Tunnel	(5) Street Reversal	(6) South Van Ness Ramp	(8) South of Market Refinement	(9) Otis/Duboce Terminus
Traffic (continued)								
Queues on Central Freeway (Southbound in PM)	South of Mission St.	South of Mission St.	None	None	Not Available	Not Available	Stop-and-go back to James Lick Freeway	Not Available
Traffic Increases on Surface Streets ▸ >20% ▸ >50%	Same as current (•)	Same as current (•)	Minor variation (•)	Minor variation (•)	Major increases (--)	Significant increases(-)	Minor variation (•)	Not Available
Maintains Traffic over Market St. during Construction	Probably (++)	Probably; some periods of stoppage (+)	No (-)	No (-)	No (-)	No (-)	No (-)	No (-)
Environmental Impacts								
Noise	Existing (-)	Improved (+)	Significant impacts (--)	Best (++)	Significant impacts (-)	Significant impacts (-)	Not Available	Not Available
Construction Impacts								
Est. Time of Construction	30 months	33 months	36 months	36 months	31 months	28 months	36 months	Not Available
Impacts on Community	Significant (-)	Significant (-)	Major (--)	Significant (-)	Significant (-)	Major (--)	Major (--)	Significant (-)
Traffic Impacts	Probably Minor (+)	Probably Minor (+)	Major (--)	Major (--)	Major (--)	Major (--)	Major (--)	Not Available

(++) = Very positive; (+) = positive; (•) = no significant impact; (-) negative; (--) very negative; (FF) = fatal flaw

Table 5-1
(Page 4 of 4)
ALTERNATIVES COMPARISON

Factor	(1) Double-Deck Retrofit	(2) "Hybrid" Retrofit	(3) Low Deck	(4) Deep Tunnel	(5) Street Reversal	(6) South Van Ness Ramp	(8) South of Market Refinement	(9) Otis/Duboce Terminus
Financial Implementation								
Capital Cost	$45-50 million	$70 million	$70-75 million	$145 million	$100 million	$115 million	$75-80 million	$45 million
Est. Time to Completion	3.9 years	4.7 years	6.5 years	6.5 years	7.5 years	7.3 years	6.5 Years	Not Available
Developable Land Created South of Fell Street	0.5 acres	0.5 acres	1.8 acres (2.9 acres with deck)	5.5 acres	3.9 acres	6.3 acres	1.8 acres (2.9 acres with deck)	4 acres
Safety								
Seismic	Greater Risk (–)	Greater Risk (–)	OK (+)	OK (+)	OK (+)	OK (+)	OK (+)	OK (+)
Design Standards	Existing (•)	See text (•)	See text (•)	See text (•)	See text (•)	See text (•)	See text (•)	See text (•)

Legend:

(++) = Very positive; (+) = positive; (•) = no significant impact; (-) negative; (–) very negative; (FF) = fatal flaw.

Wilbur Smith Associates; November, 1995

Neighborhood Cohesion

1. **Hayes Valley:** Generally, the impact of the changes is greatest along the current freeway corridor. Removal of the freeway structure would create an obvious benefit. Alternatives 3 and 8 put the structure mostly underground, which has visual benefits. The barrier it creates with an open cut could be significantly mitigated by decking over as much of the roadway as possible (only the area between Page and Haight Streets would qualify). Alternatives 5 and 6, have the roadway at grade, thereby providing the best visual ties. But a fairly minor street (Octavia) would be replaced by a heavily trafficked street so some of the visual benefits would be offset by a functional barrier.

2. **South of Market:** Alternatives 1 through 4 and 8 have very little impact on the South of Market area. Alternative 5 has significant impact because of its street reorientation that generally brings more traffic through the area and reallocates traffic differently than it does now. Alternative 6 creates a significant structure in the South Van Ness Avenue area that would have major impact on adjacent businesses but is generally in a non-residential area. Alternative 9 would probably increase surface street traffic significantly in the area.

3. **Tenderloin/Civic Center:** No significant physical changes would be made in these areas. However, traffic increases will occur in the alternatives that reduce capacity along the Central Freeway corridor.

Impact on Other Modes

To aid in understanding the discussion, Figure 5-1 shows current transit routes through the study area.

1. **Market Street Transit:** As previously stated, all alternatives would be planned to protect the integrity of Market Street transit east of Van Ness Avenue. Alternative 6 adds a crossing of Market Street at Franklin Street, decreasing Market Street "green time" by one-third and, therefore, having a negative impact on Haight Street buses. Alternatives 5 through 8 have major intersections at Octavia and Market which would have some negative impact on the F-Line trolleys. However, these run at 10 minute headways so that impact would be less than on buses east of Market Street.

2. **Mission Street Transit:** Most of the alternatives decrease traffic on Mission Street in the important link between the Central Freeway and South Van Ness Avenue and so would have a positive impact on movement of the #14 Mission buses. The exception is Alternative 6, which brings more traffic into the congested Mission/South Van Ness Avenue intersection.

3. **Haight/Page Transit:** Neither of these streets is changed in any of the alternatives. Alternatives 5, 6 and 9, which increase traffic along Octavia Street, are likely to slow bus movement on Page and Haight Streets since traffic signals with limited "green time" would be required. However, this is a fairly minor impact. A more major impact is the signal timing in Alternative 6 described above in the discussion of Market Street.

4. **Changes to Current Transit:** This category includes physical or operational changes that would be required in current routes both during and after construction. Alternative 1 would have almost no changes; possibly trolley wire would have to be rehung on Page and Haight streets during the retrofit. Alternatives 2 and 4 would definitely require rehanging of the wire, with minor disruption in service during construction. Alternative 3 would have somewhat more of the same disruption during construction because of street closures in that period along the Octavia Street corridor and on Market Street.

   The changes caused by street reversal would cause the largest change in transit service, including:

   i. Reversal of routing and stops of the #19 Polk bus along Eighth, Ninth, Hyde, Grove and Larkin Streets.

   ii. Reversal of routing and stops for SamTrans along Ninth, Tenth, Grove and Fell Streets.

   iii. Reversal of routing, stops, and possible rehanging of trolley wire for the #21 bus on Hayes and Grove Streets.

   Alternative 6 would cause particular disruption to the #14, 42 and 47 buses during construction.

5. **Compatibility with Future Transit:** The only significant identified possible transit change in the area is MUNI's proposal to look at exclusive transit lanes on Van Ness Avenue. None of the alternatives preclude this from happening, although it would be facilitated by decreasing traffic on Van Ness Avenue so that traffic could be handled more easily. Alternative 5 decreases volumes to some degree, so it could have a positive impact. Alternative 8 would increase traffic on Van Ness Avenue.

6. **Bike and Pedestrian Impacts:** The recently submitted (though not yet officially adopted) bicycle plan has bicycle routes on the following streets in the corridor: Howard Street, Folsom Street, Division Street, Seventh Street, Eleventh Street, Market Street, Polk Street, Larkin Street, Turk Street, Golden Gate Avenue, and Page Street . Significant increases or decreases of vehicular traffic on these routes (shown in Figure 5-2) are noted.

Pedestrian impacts tend to be very localized and are, therefore, difficult to evaluate on any grand scale in this study. Any adverse pedestrian impacts resulting from the selected alternative would need to be mitigated in subsequent design and planning.

Traffic

More detailed explanation of these factors is given in Technical Memorandum #6 on Traffic.

1. **Vehicles/Lane Crossing Market Street:** The Market Street screenline analysis indicated that with current configuration there was about a 7 percent excess capacity in the PM peak hour for traffic to cross Market Street at-grade between 6th Street and Duboce Avenue. This table compares the number of vehicles needing to cross Market Street at-grade divided by the number of lanes available for the crossing under each of the alternatives (see Chapter 4). It shows a 5 percent decrease for Alternative 3 with an increase of from 18 to 40 percent for Alternatives 5 and 9. Thus, even though more lanes are available in the latter alternatives to make the crossing, they do not make up for the increased traffic that currently crosses Market Street on the Freeway.

2. **Key Intersections at Levels of Service E and F:** These levels generally denote unsatisfactory delays at intersections, with LOS F being worse than LOS E. Of the 18 intersections chosen for analysis in Technical Memorandum #6, the number indicated in this table are at unsatisfactory levels.

3. **Queues on Central Freeway:** This is based on output from the CORFLO model indicating how far the traffic is likely to be backed up by 6:00 PM, given constant flow over the time period.

4. **Streets Having Traffic Increases of more than 20/50 percent:** Since the livability of a street and property values are generally decreased when major traffic increases occur, it is important to note the location and extent of traffic increases in the area.The actual extent and location of traffic increases of 20 and 50 percent is shown in Chapter 4. The overall impact is summarized in Table 5-1.

5. **Maintains Traffic over Market Street During Construction:** Alternatives 1 and 2 maintain a grade-separated crossing of Market Street during the construction period (although, temporary traffic mitigations would be required to maintain cross-Market Street capacity during some phases of construction). The other alternatives do not permit this to happen. The construction process must be analyzed in greater detail to ensure that traffic can be maintained on the structure, so "probably" rather than a definite yes has been indicated for Alternatives 1 and 2.

Environmental Impacts

1. **Noise:** A noise study was performed to determine general levels of noise impact for several proposed Alternatives for the Central Freeway Areawide Traffic Study. The Caltrans computer noise prediction program, SOUND32, was utilized to predict the noise levels from the freeway structure and from city streets. Noise measurements were performed in July 1995 to gain some understanding of the existing noise environment, including assessment of the contributions of the local traffic and reflections from the existing double deck freeway structure. Figure 5-3 indicates the receptor locations that were analyzed. The existing noise environment along the freeway and along major city arterials already exceeds the Caltrans noise abatement criterion of 67 dBA.

   Alternative 2 (high single-deck hybrid concept) will reduce the noise levels compared to the existing due to the increased distance from receptors, and reduction/elimination of reflection effects that the upper deck has on lower deck traffic. Noise levels at Receptors 4 through 7 and Receptor 10 will experience noise levels approaching or exceeding the 67 dBA criterion.

   Alternative 3 (low single-deck freeway depressed north of Market Street) will increase noise levels compared to the existing condition. Despite the shielding provided by the edge of the retained cut, the roadway will be closer to the receptors. Noise levels will approach or exceed 67 dBA at all Receptors. At the street level, a marked increase in noise will occur on Oak Street between Laguna and Octavia, as vehicles access the freeway from Oak Street and not Laguna Street. Otherwise, there will be minimal change at other locations. Covering this block from Haight to Page Streets will generate lower noise levels for Receptors 4 through 7.

   Alternative 4 (deep tunnel under MUNI Metro) has not been modelled. Qualitatively speaking, there will be no noise impacts to Receptors 4 through 7, and perhaps minimal impacts at Receptors 8 and 9 with this Alternative.

   Alternatives 5 and 6 will result in noise impacts to all Receptors except Receptors 8 and 10. With the removal of the freeway north of Market Street, the street level traffic at Octavia Street will increase dramatically. The volume of traffic on Oak Street will still be significant, but not sufficient to keep noise levels above 65.5 dBA. At the street level, a marked increase in noise will occur on Octavia Street, as cars now access the freeway at Market Street.

   Alternatives 8 and 9 were not analyzed. It is important to note that the analysis is only comparative and absolute design for mitigation on the selected alternative should be done at a later date.

Construction Impacts

Construction impacts are a function of the intensity of construction, the length of time required, the amount of traffic disruption that would occur and visibility. Technical Memo #7 (Construction) discusses these issues in detail.

1. **Estimated Construction Time:** The sequence and length of construction varies between the alternatives under consideration, and all will require road closures and diversion of local and/or freeway traffic for at least some periods during construction. It is a basic premise that Alternatives 1 and 2 would be constructed while traffic is still. As a consequence, the schedule for construction will be extended in order to accomplish a detailed sequence of staged construction, including temporary works and partial freeway closures.

   In contrast, it is anticipated that Alternatives 3 through 9 would have two distinct phases; a demolition phase for removal of redundant sections of the freeway, followed by a construction phase for the permanent structure. Therefore, it would be necessary to close all, or portions of the existing Central Freeway to traffic, during both phases, and detour this traffic to the local street network. In addition, those local streets in the immediate vicinity of the demolition work would need to be closed, and traffic re-routed on a short-term basis.

   Due to the restricted character of the site and the nature of Alternatives 3 through 9, the opportunities for the demolition and construction phases to proceed concurrently are limited. However, it would be possible for foundation work to commence behind the demolition process, with a lag period of 2-3 months to allow for clean up and possible utility relocations.

2. **Impacts on Community:** Alternative 1 would benefit by not requiring major demolition and a major level of construction, although the impacts (particularly noise) would be far from trivial. Alternative 2 would require far more demolition and have a great level of visible construction activity since it involves major reconstruction of the existing deck. Alternatives 3 and 8 would have even greater construction impact than Alternative 2 because they involve underground cut-and-cover work with demolition, excavation and shoring of the cut. Alternative 4 requires major work but a deep bore tunnel should have lesser community impact. Alternative 5 probably has the least impact because it mostly involves demolition and has new structures in primarily commercial areas. Alternative 6 has major construction impact in the South Van Ness Avenue area and so would have significant negative impact on businesses in the area during the construction period. Alternative 9 would have lesser impacts in the Octavia Street corridor.

3. **Traffic Impacts:** The extent of traffic rerouting during construction is discussed in Technical Memorandum #7. In general, significant rerouting is a part of all alternatives with the possible exceptions of Alternatives 1 and 2, if they can be kept open during construction.

Financial/Implementation

1. **Capital Cost:** The cost estimates include demolition, construction, right-of-way acquisition, engineering, traffic maintenance during staging and a 30 percent contingency.

2. **Time to Completion:** This indicates the forecasted number of years between the time of decision on a preferred alternative until the time it could be completed and open for traffic. This includes environmental impact studies, design, property acquisition and construction. It has been assumed that Alternatives 1 and 2 could be constructed with a negative declaration as the only environmental documentation. All other alternatives are assumed to require an EIS. It is also assumed that most design of the double-deck retrofit is already completed. Right-of-way acquisition time is estimated as 18 months.

Safety

1. **Seismic:** The current structure between Fell and Mission Streets requires seismic retrofit and is obviously vulnerable to major future seismic events. Alternatives 3-6, which call for demolition of the existing structure, would provide the least seismic risk. Alternative 1 and Alternative 2 have more risk because they involve construction and maintenance of traffic on the existing structure. In addition, it is likely that an entirely new structure built to current seismic standards could be made more stable than a retrofit.

2. **Design Standards:** Neither the existing freeway nor any of the future alternatives meet current Caltrans freeway design standards, which are difficult to achieve in congested urban areas. In general, new sections would be designed as ramps, with lower design speeds, rather than as mainline freeway sections.

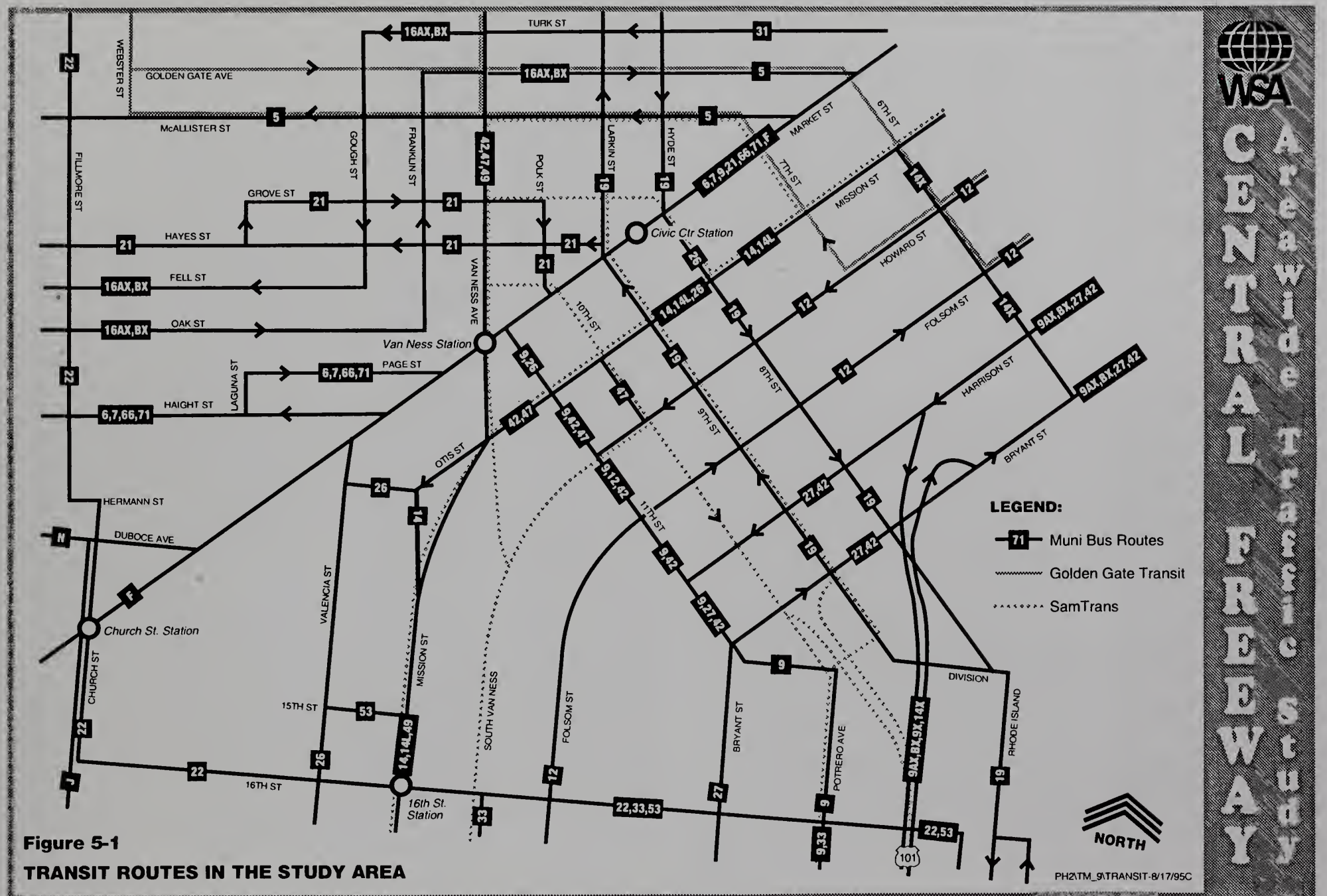


Figure 5-1

TRANSIT ROUTES IN THE STUDY AREA

Figure 5-2

PLANNED BIKE ROUTES IN STUDY AREA

Areawide Traffic Study

CENTRAL FREEWAY

PH2\FINAL\BIKESTUD - 8/23/95C

Figure 5-3

LOCATIONS OF MEASUREMENTS AND MODELLED RECEPTORS

WSA

CENTRAL FREEWAY

Areawide Traffic Study

PH2\FINAL\BIKESTUD - 8/24/95C

6. FUNDING AND IMPLEMENTATION

INTRODUCTION

Two important questions regarding project implementation need to be addressed in evaluating Central Freeway alternatives:

1. How could the alternative be funded?

2. What is the time period for implementation of the alternative?

The first question is critical because current Federal emergency relief funding earmarked for the Freeway has less than $30 million remaining out of an original $40 million allocation. The alternatives examined are estimated to cost from $45 to $145 million.

The second question is important because of the desire to effectuate the project as soon as possible. The freeway structure is in need of a seismic retrofit. The longer it remains unchanged, the greater the probability of such a seismic event affecting the existing structure.

FUNDING

This section discusses possible funding sources for the Freeway. Following the selection of a preferred alternative, a more detailed financial plan will be required.

Emergency Relief Funding

Following the Loma Prieta earthquake, Congress appropriated $1 billion in federal Emergency Relief (ER) funds for transportation repair and replacement assistance throughout Northern California. At the time, the Federal Highway Administration (FHWA), in cooperation with Caltrans, allocated $40 million for the Central Freeway, an amount that was estimated to be sufficient for seismic upgrading of the existing structure.

Receipt of ER funds is premised on the selection of a replacement alternative that meets FHWA/Caltrans requirements, including the following:

1. Functional replacement of the original project;
2. Maintenance of roadway capacity; and
3. No ancillary improvements beyond the functional replacement of the original project.

After demolition and temporary shoring of the remaining structure, plus design and planning costs to date, only $27 million of the $40 million remains: $23.5 million in federal emergency relief funding and $3.5 million in matching State resources.

Emergency Relief Stand-By Appropriation

Each year Congress appropriates approximately $100 million, available up to the end of the fiscal year, for transportation needs associated with natural disasters. For those years without significant natural disasters, the funds are returned to the US Treasury at the end of the federal fiscal year. If funds for this program are not fully expended in a given year, it is possible to earmark funds for a particular project. To accomplish this, the local jurisdiction must have the full cooperation of their Congressional delegations, and hopefully, not have another major budget objective for that particular year.

Following the selection of an alternative, given sufficient time, this funding source could be a potential source of revenue for the next phase of the Central Freeway Project. It should be noted, however, that the acquisition of new ER revenues will be an uphill battle for California. There are many in Congress who believe that California has been back to the "ER well" too often in the last decade.

STIP and RTP Reprogramming

The State Transportation Improvement Program (STIP) delineates all federal and state funding commitments to local roadway programs over a multi-year period. The state program is currently experiencing a significant shortfall in projected levels of needed transportation funding. Current estimates include a $5 billion shortfall over the next 20 years. As with other non-Emergency Relief funding sources, the City of San Francisco would be required to delay, eliminate or downsize existing STIP funding commitments to provide funds to the Central Freeway.

STIP reprogramming would require the approval of the San Francisco Board of Supervisors, the Metropolitan Transportation Commission, and the California Transportation Commission. Most STIP funding funds will not be available until late in this decade.

Additionally, the Regional Transportation Plan (RTP) sets forth a ten year plan for other projects not fully funded via the STIP or federal Surface Transportation Program and Congestion Mitigation and Air Quality funds. Reprogramming the funds from this list of projects would also require the downsizing, delay or elimination of certain projects. More importantly, the County's priority list includes the region's highest percentage of transit projects. To shift the funding priorities for the RTP, the Board of Supervisors and the Metropolitan Transportation Commission would have to concur that the Central Freeway is a higher priority.

Surplus Land Sales

In March 1990, State Senator Kopp introduced a bill that significantly improved the funding capabilities of the Embarcadero Roadway. SB 181 allowed the City of San Francisco to remove State Highway Route 480 from the state system, assume all liabilities and responsibilities associated with that roadway, and turned over to the City the right of way that had previously been required as part of the roadway structure. The bill required that the sale, disposition or "net proceeds" of the property be used to fund the replacement project.

Assuming the City is successful in obtaining legislation similar to SB 181, the net proceeds of alternative land sales could reduce the construction costs of the project. The Central Freeway Alternatives provide varying amounts of surplus right of way. Table 6-1 approximates the sales revenue that might accrue to the project, given the comparable sales information cited. These estimates assume that adjacent zoning would apply. Comparable sales information provided by the San Francisco Department of Real Estate indicates values of approximately $55 per square foot for residential square footage and $90 per square foot for commercial square footage.

These rates indicated that net proceeds for parcels north of Fell Street could generate as much as $4.6 million in land sales. The area south of Fell Street could generate between $1.2 million and $20.0 million, depending on which alternative is selected.

Seismic Retrofit Program

There are two potential sources of seismic funding available via the State of California. These include the current allocation of state seismic improvement funding contained in the State Transportation Improvement Program (STIP) and the Regional Transportation Plan (RTP), cited in previous pages. Allocating funds from the State's existing seismic program to the Central Freeway would, no doubt, require the delay of currently programmed projects located outside of San Francisco. However, the State is currently considering new seismic funding sources that would increase the overall funding for these types of projects.

New legislation, SB 146, The Seismic Retrofit Bond Act of 1996, proposes $2 billion in additional state general obligation bonds for the seismic retrofit of state-owned highways and bridges throughout the state. The bill is proposed for voter consideration later this year. The bill currently specifies that $650 million would be used to upgrade toll bridges; the remaining funding would be available to state approved projects.

Table 6-1

IMPACTS OF PROPOSED LAND SALES
Central Freeway - Phase II

Alternative Name	Total Available Sq.Ft.	Estimated Zoning Shares		Sq.Ft. by Zone		Range of Sale Values ($/Sq.Ft.)		Projected Sale Revenue	Total Sale Revenue*
		Resid.	Comm.	Resid.	Comm.	Resid.	Comm.		
1. Double Deck Retrofit	22,000	100%		22,000	-	$55.00	$90.00	$1,210,000	**$5,828,318**
2. Single-Deck "Hybrid" Retrofit	22,000	100%		22,000	-	$55.00	$90.00	$1,210,000	**$5,828,318**
3. Low-Deck Alternative	125,000	85%	15%	106,250	18,750	$55.00	$90.00	$7,531,250	**$12,149,568**
4. Deep Tunnel	238,000	80%	20%	190,400	47,600	$55.00	$90.00	$14,756,000	**$19,374,318**
5. Street Reversal	170,000	85%	15%	144,500	25,500	$55.00	$90.00	$10,242,500	**$14,860,818**
6. South Van Ness Ramps	276,000	50%	50%	138,000	138,000	$55.00	$90.00	$20,010,000	**$24,628,318**
8. South of Market Refinement	125,000	85%	15%	106,250	18,750	$55.00	$90.00	$7,531,250	**$12,149,568**
9. Otis/Duboce Terminus	238,000	80%	20%	190,400	47,600	$55.00	$90.00	$14,756,000	**$19,374,318**
Fell St. to Grove St. Parcels	74,489	80%	20%	59,591	14,898	$55.00	$90.00	$4,618,318	

* Including Fell Street to Grove Street parcels.

Sources: San Francisco Departments of City Planning and Real Estate; Pittman & Hames Associates.

San Francisco County Transportation Sales Tax Funding

In 1989 San Francisco County voters passed legislation establishing the ½¢ transportation sales tax. The sales tax appeared on the ballot as Proposition B and established a 20 year funding program for a list of transit, roadway, transportation systems management (TSM), and paratransit projects and programs. The San Francisco County Transportation Authority (SFCTA) is currently in the process of updating their Strategic Plan. The plan specifies the Authority's intent to fund a finite list of projects over a 10 year period.

The most likely category for any Central Freeway expenditure would be as a major capital project in the Street & Traffic Safety category, similar to the Embarcadero Roadway, which is allocated $22.5 million under that program. However the Central Freeway was not included in 1989 and all of the funding established under that category and subcategory has been allocated to other existing projects.

In researching this funding source, questions remain with regard to the Central Freeway's eligibility for Proposition B sales tax dollars. If there had been an understanding of the project's requirements in 1989, the project might have been a component of the Expenditure Plan. Current circumstances, however, dictate the following considerations:

- The SFCTA's Commission has never sought to amend the Expenditure Plan.
- The Commission has the authority to reprogram funds within the categories of the Expenditure Plan, but does not have explicit authority to add major projects to the Plan.
- Assuming a positive ruling from the Commission and legal counsel, the inclusion of any funding for the Central Freeway in the sales tax program would necessitate the elimination of another project or program.

In summary, the use of this declining revenue source will be very difficult and may necessitate an independent legal ruling. However, assuming the clearing of these difficult, if not impossible, hurdles and Commission concurrence, funds within the subcategories of Streets and Traffic Safety do exist in sufficient amounts to provide all or a portion of the local match required for the Central Freeway alternatives.

Regional Gas Tax

The Metropolitan Transportation Commission is currently considering the introduction of a new regional tax to support the area's transportation needs. One of the most promising revenue sources is either a regional or statewide sales tax levied on fuel. Assuming that the funds will be returned to the counties based on population totals, San Francisco could hope to obtain approximately $27

million per year in new transportation revenues. Estimating when these potential revenues would become available to the region and/or San Francisco is very speculative at this time. The legislature would first have to pass enabling legislation. Based on the recent Santa Clara County Measure decision the sales tax would then have to be approved by a two-third majority of local voters.

General Fund

Given the constraints currently placed on the City's general fund and the lack of a precedent in general fund allocations for the Embarcadero Project, this source is not considered feasible for the Central Freeway.

Statewide Trades

Another source of funding potentially available to this project is the use of "traded" state funds. If another jurisdiction has access to a sufficient source of funding that it cannot use, those funds could be traded to a jurisdiction requiring rail funds. The Central Freeway, however, requires roadway funds. Unlike rail bond monies, this type of funding is in highest demand in California at this time, making a trade very difficult.

Special Federal Demonstration Funding

If all previous sources of funding prove inadequate, a final resource is special federal transportation demonstration grant funds. This type of grant funding is currently very unpopular but does still exist. Demonstration grant funds are annually earmarked in Congress to meet local constituency needs. Following the selection of a preferred alternative, all project elements of the selected alternative should be reviewed to determine whether or not a portion of the alternative could be justified as a federal demonstration.

It should be noted that reliance upon this source will require the full cooperation and enthusiastic support of all San Francisco congressional legislators. In particular, Senator Feinstein's support would be pivotal. Over the next two years, Congress will begin to structure the reauthorization of the Intermodal Surface Transportation Efficiency Act (ISTEA). This seven-year bill will incorporate special demonstration project funding earmarks and may be an excellent potential funding source for a portion of the Central Freeway.

Preliminary Conclusions

There are no available sources of revenue that can easily be tapped to make up the funding shortfall for the selected Central Freeway alternative. The recommended primary strategy is immediate pursuit of additional federal Emergency Relief funding.

The next logical source would be the reprogramming of existing projects in the STIP's seismic program. Potential sources of local match resources include land sale revenues, new seismic retrofit funds, regional gas tax funds, and a very small portion of eligible sales tax funds. Pursuit of other funding sources in this report would be recommended only if any of the more optimistic sources cited did not materialize in the amounts anticipated.

IMPLEMENTATION PERIOD

Major transportation construction projects involve five general tasks after preliminary planning has ended:

Task 1: Environmental Process
Task 2: Preliminary Design
Task 3: Final Design
Task 4: Property Acquisition (where required)
Task 5: Construction

This section discusses probable timing of these phases, with particular emphasis on the environmental issues involved and their impact on the time required for project implementation.

Environmental Documentation

There are essentially three levels of environmental documentation:

- Environmental impact statements or EIS's
- Categorical exclusions or CE's
- Environmental assessments or EA's

An EIS requires extensive analysis, public hearings and review procedures, so that the process seldom takes less than two years to accomplish. A CE moves much more quickly, requiring only a concurrent decision by Caltrans District 4 and FHWA, although some technical backup would be required to justify a CE. An EA process occurs when it is not clear whether or not an EIS would be required. If EA technical work indicates that no significant impacts would occur, a FONSI (finding of no significant impact) would be prepared. It is likely that the EA process leading to a FONSI could take place within a year.

Caltrans has determined that a CE can be granted for the current "Hybrid Alternative" (Alternative 2) that District 4 has been pursuing. That opinion is based on technical environmental studies done in 1994 that analyzed noise, air quality and aesthetic impacts in some detail.

Technically, that decision could be made without public involvement. However, if the hybrid alternative is chosen, Caltrans is committed to soliciting public input prior to making a formal decision. Public meetings, but not a formal public hearing, would be held. Significant opposition to the alternative could cause Caltrans and FHWA to pursue a higher level environmental documentation (EA or EIS). Senate Bill 181 says that "*...the department may proceed with the repair or replacement of the damaged portions, if the selected alternative is approved by a resolution of the city and county.*"

If a preferred alternative other than the "hybrid" or double-deck retrofit is selected, Caltrans and FHWA would need to determine the proper environmental route to take. The CE, EA or EIS processes are all potentially available and would have significant impact on project timing.

A CE would still require the technical studies that were performed for the "hybrid" and probably take at least three months to complete. It would be safe to assume another two months for a public meeting and for a decision to be made. Environmental decisions are normally made at the District level.

The EA/FONSI route would probably require an equivalent time period for technical work but would involve more procedural time. The EA has a 30 day comment period and may (though it's not required) include a public hearing. After the comment period, the FHWA may then issue a FONSI. If it is determined that the project has significant impacts, an EIS will be required and a more lengthy process will be required.

Design, Property Acquisition and Construction

Preliminary design can occur concurrently with the environmental process, which would make sense since time is of the essence.

After completion of the preliminary design process, 18 months has been assumed for final design and advertising of the project, with the exception of Alternative 1, which has largely been designed and is allocated 12 months. It is not unreasonable to assume a further 18 months if complex property acquisition is required. The estimated time of construction is discussed in Technical Memorandum #7.

Total Implementation Time

Table 6-2 summarizes estimated implementation time for the alternatives under the assumptions described above.

Table 6-2

ESTIMATED IMPLEMENTATION TIME IN MONTHS
Central Freeway - Phase II

Phase	Alternative							
	1	2	3	4	5	6	8	9
Environmental Documentation	0	0	24	24	24	24	24	24
Design	18	18	18	18	18	18	18	18
Property Acquisition	0	0	0	0	18	18	18	18
Construction	36	33	36	36	30	28	36	30
Total Months	47	56	78	78	90	88	96	90
Total Years	3.9	4.7	6.5	6.5	7.5	7.3	8.0	7.5

Wilbur Smith Associates; November 1995

7. RECOMMENDATIONS

INTRODUCTION

This chapter discusses recommendations in three important areas:

1. Preferred alternatives for the Central Freeway.
2. Proposed next steps toward implementing the alternative.
3. Immediate actions for improving traffic flow in the corridor.

PREFERRED ALTERNATIVES

In late August, Wilbur Smith Associates recommended that Alternative 3 be pursued as the preferred alternative. On September 18, the Citizens' Advisory Task Force for the Central Freeway endorsed Alternative 8 as the alternative recommended to the Board of Supervisors. On October 17, the Board of Supervisors adopted a resolution recommending that both alternatives plus a "no build" retrofit alternative be studied in an environmental process (see Appendix A).

Alternative 3 - Low Single Deck Freeway Depressed North of Market Street

The consultant team recommended that Alternative 3, the Low Single-Deck Alternative (see Figures 7-1 and 7-2), be selected for a number of reasons:

1. This alternative provides traffic functions similar to those provided by the Freeway prior to Loma Prieta but is much more environmentally sensitive than the current and prior elevated structure.

2. Traffic increases on City streets would be minimal and confined to the corridor of the current Freeway.

3. Construction and construction impacts would be confined to the current Freeway corridor.

4. The primarily below-ground roadway will present a major improvement to the immediate environment of the Freeway corridor north of Market Street.

5. A grade-separated crossing of Market Street is maintained, reducing traffic on streets intersecting Market Street and not interfering with MUNI service on Market and Mission Streets.

6. By requiring total reconstruction of the concrete section of the Freeway, a safer seismic structure can be created without involving the risks of rebuilding or retrofitting while maintaining traffic.

7. It is believed that Caltrans and the City can support this alternative, thereby speeding implementation and increasing the potential for full funding.

To work most effectively for the City, Alternative 3 has some adverse characteristics which need to be mitigated as part of the environmental, design and construction process:

1. The open cut created by the freeway should be covered over between Haight and Page Streets to create more land, reduce noise and improve visual and pedestrian access across the Octavia Street corridor.

2. Particular care needs to be devoted to design of the low deck as it crosses Market Street in terms of lighting and visual impact so that a good pedestrian corridor along Market Street can be created and the current unsightly environment under the Freeway eliminated.

3. The traffic simulation model indicates that improved traffic flow on the Central Freeway in Alternative 3 draws more traffic to the Freeway. While beneficial in reducing traffic along a congested section of Mission Street (from where most of the excess is drawn) it brings more traffic into the Hayes Valley (and particularly Oak Street) than needs to be there. Traffic improvements along alternative routes (see end of this Chapter) are needed to divert some of the traffic to other routes. These should be implemented prior to construction and the most effective should remain when the Freeway is completed.

4. Traffic along Oak Street between Laguna and Franklin Streets needs to be reduced and controlled through roadway design, signalling and pedestrian walkways to facilitate pedestrian, bicycle and driveway movements to the maximum extent possible.

5. Impacts during construction have to be mitigated as much as possible for this alternative. This will require noise, dust and other environmental safeguards as well as an expedited construction schedule.

6. Noise impacts will need to be mitigated at certain locations.

These mitigations should be developed and monitored through continued active Task Force review and communications with affected parties.

Alternative 8 - South of Market Refinement

Alternative 8 is similar to Alternative 3, with two major exceptions: an at-grade intersection with the Freeway at Market Street and a new off-ramp at South Van Ness Avenue rather than Mission Street (see Figures 7-3 and 7-4). This alternative is superior to Alternative 3 in providing a clear visual corridor along Market Street. It also routes exiting northbound traffic along South Van Ness Avenue rather than Mission Street, providing potential for fewer conflicts with Mission Street transit.

Since Alternative 8 was proposed late in the Study and contains some new highway structures, some of its geometrics need to be in greater detail to reach even the conceptual level developed for Alternative 3. The ramps at Duboce and South Van Ness Avenues need to be studied further early in the environmental process to obtain more accurate estimates of construction cost and property acquisition requirements. Alternative 8 also requires mitigations in a number of areas:

1. Alternative 8 creates a major intersection at Market Street and the Freeway. Capacity analyses show that with two lanes in each direction it operates at level-of-service F, with potential for significant backups on the Freeway. The intersection itself, or the overall study area traffic network needs to be adjusted if this alternative is to be considered acceptable from a traffic standpoint.

2. As in Alternative 3,

    i. The deck between Haight and Page Streets should be provided; and
    ii. Traffic along Oak Street between Laguna and Franklin should be reduced and controlled.

3. Construction and noise impacts need to be mitigated.

NEXT STEPS FOR IMPLEMENTATION

The immediate goal of this process is to implement a preferred alternative as soon as possible. The City should meet with Caltrans to discuss the next steps toward implementation, including:

1. A joint strategy to seeking funding for the alternatives;
2. Expediting the preparation of environmental documentation; and
3. A strategy for dealing with the existing structure during the environmental process.

All the above should be coordinated closely with the Citizens' Advisory Task Force, which will be continued through environmental and subsequent phases and should continue to have significant input in the process.

IMMEDIATE ACTIONS

Other traffic improvements should be made prior to construction; most could continue after the Freeway is reconstructed. Our recommended measures include the following:

1. **Eighth Street exit from James Lick Freeway**: The movement off the I-80 ramp onto Ninth Street could be facilitated by a number of factors:

    i. Allocate more signal green time for vehicles exiting the I-80 freeway ramp at Eighth Street;

    ii. Coordinate the signals on Harrison at Eighth and Ninth Streets to allow uninterrupted flow for vehicles exiting from the freeway onto Ninth Street;

    iii. Channelize traffic running north on Ninth Street to the left lanes to allow for continuous right-turns from Harrison Street onto Ninth Street; and

    iv. Sign traffic coming from the Bay Bridge to Civic Center via this ramp, rather than route them via the Central Freeway.

2. **Ninth Street and Market Street**: Not much can or needs to be done here to increase traffic flow. The key is enforcement of tow-away zones and coming up with a way to prohibit truck loading on Hayes Street in the PM peak hours at the Bill Graham Civic Auditorium facility when it reopens. The latter concern is probably important enough to start discussions as soon as possible.

3. **Turk Street and Golden Gate Avenue**: These streets have some excess capacity and their use by traffic to the Western Addition and via Gough/Franklin to Pacific Heights should be encouraged by signing and signal timing. Given the residential character of these streets west of Gough Street, we believe that curb parking should not be restricted in that area.

4. **Gough Street and Fell Street**: Currently, southbound traffic on Gough Street destined for the Central Freeway is signed to go right on Fell Street to the Laguna/Oak entrance. San Jose bound trips should be signed to turn left onto Fell Street toward the Tenth Street entrance. This would definitely be necessary if the Freeway is reconstructed and would require the modifications at Fell and Market Streets (see below).

5. **Fell Street and Market Street:** There currently are four lanes on Tenth Street, receiving two lanes each from Polk and Fell Streets. If desirable, increasing this to six lanes should be studied and would require some geometric changes to the intersection and some additional peak period tow-away restrictions. This change would increase traffic in front of City Hall, which may not be desirable. A logical compromise would be to have five lanes coming to Tenth Street, with three from Fell Street and two from Polk Street.

6. **Mission and Thirteenth Streets:** A number of changes should be made to facilitate traffic exiting the ramp at Mission Street. Ramp traffic going westbound to Duboce Avenue should be allowed to move concurrently with traffic going west on Thirteenth Street. Implementing that system that would require the following changes:

   i. Channelling westbound Thirteenth Street traffic into two lanes east of Mission Street.

   ii. Prohibiting right-turns from westbound Thirteenth Street onto Mission Street.

   iii. Prohibiting left-turns from the ramp onto Mission Street.

   iv. Designating the left-most ramp lane exclusively for Duboce Avenue and the right-most lane exclusively for Van Ness Avenue.

   In addition, to facilitate traffic flow, the City should consider making off-ramp right-turns onto Mission Street protected channelized entry, and reducing the pedestrian signal phase timing to allow for a refuge at the island between Mission and Otis Streets.

7. **South Van Ness Avenue/Howard Street/Thirteenth Street:** This congested area has two intersections in close proximity and heavy traffic destined for the Central Freeway southbound on-ramp. The South Van Ness Avenue/Howard Street intersection is STOP sign-controlled, while there is a signal at the 13th Street/South Van Ness intersection.

   One potential solution developed by the consultant would be to essentially eliminate the South Van Ness Avenue/Howard Street intersection by prohibiting left-turns. This would also be used to prohibit (or at least discourage) Howard Street traffic from accessing the Freeway at South Van Ness Avenue. This concept would use 12th Street from Howard Street to South Van Ness Avenue for traffic continuing northbound on South Van Ness Avenue. This plan (or any meaningful change at this intersection) should be studied in greater detail and discussed with the community prior to implementation.

Prior to demolition and reconstruction of the Central Freeway, all foreseeable utility and maintenance road construction work which would reduce traffic capacity should be completed and only emergency closures of traffic lanes should be permitted during the freeway construction period.

Figure 7-1

ALTERNATIVE 3
Octavia Street Aerial View: Low Deck, Tunnel, Air Rights at Page, Haight

Figure 7-2
ALTERNATIVE 3 - Market Street View: Low Single Deck

Figure 7-3

ALTERNATIVE 8
Octavia Street Aerial View: Grade Crossing at Market, Tunnel, Air Rights at Page, Haight

Figure 7-4
ALTERNATIVE 8 - Market Street View: No Deck, Grade Crossing

APPENDICES

A - Board of Supervisors Resolution 869-95

B - Citizen's Advisory Task Force Report of Recommnedations

Amendment of the Whole 10/17/95

FILE NO. 85-95-3

RESOLUTION NO. 869-95

[Central Freeway]

URGING ALTERNATIVE #3, THE SINGLE-LOW DECK ALTERNATIVE OVER MARKET ST., AND ALTERNATIVE # 8, WHICH INCLUDES RAMPS AT DUBOCE AVE. AND SOUTH VAN NESS AVE., BE ADVANCED INTO THE ENVIRONMENTAL REVIEW PROCESS, WITH THE UNDERSTANDING THAT CALTRANS IS ALSO STUDYING A RETROFIT OF THE EXISTING STRUCTURE OR "NO BUILD".

WHEREAS, The Central Freeway was damaged in the October 1989 Loma Prieta earthquake, and

WHEREAS, Both the March 1995 Department of Parking & Traffic's Phase II Central Freeway Areawide Traffic Study and the report from the Citizen's Advisory Task Force are complete and have been reported to the public and the Housing & Land Use Committee, and

WHEREAS, Funding from the state and federal government could be threatened if an alternative is not put forth immediately, and

WHEREAS, There is a general consensus that either alternative #3, the single-low deck alternative over Market St., or alternative #8, the south of Market refinement with ramps at Duboce and South Van Ness, would be the preferred alternative for the Central Freeway, now, therefore, be it

RESOLVED, That the Board of Supervisors of the City and County of San Francisco urges alternative #3, the single-low deck alternative over Market St., and alternative # 8, which includes ramps at Duboce Ave and South Van Ness Ave., be advanced into the environmental review process, with the understanding that Caltrans is also studying a retrofit of the existing structure or "no build", and, be it

FURTHER RESOLVED, That the City forwards Alternative 3 and 8 for the purpose of analysis under the California Environmental Quality Act (CEQA) and for the National Environmental Policy Act (NEPA), and, be it

FURTHER RESOLVED, That the Clerk of the Board of Supervisors transmit a copy of this resolution in a timely manner to Mr Joe Browne, District Director, Caltrans, Box 23660, Oakland, CA 94623-0660

SUPERVISORS HALLINAN, MIGDEN, BIERMAN, TENG OCTOBER 16, 1995

Ammiano

BOARD OF SUPERVISORS

Adopted - Board of Supervisors, San Francisco October 17, 1995

Ayes: Supervisors Ammiano Bierman Hallinan Hsieh Kaufman Kennedy Leal Migden Shelley Teng

Absent: Supervisor Alioto

I hereby certify that the foregoing resolution was adopted by the Board of Supervisors of the City and County of San Francisco

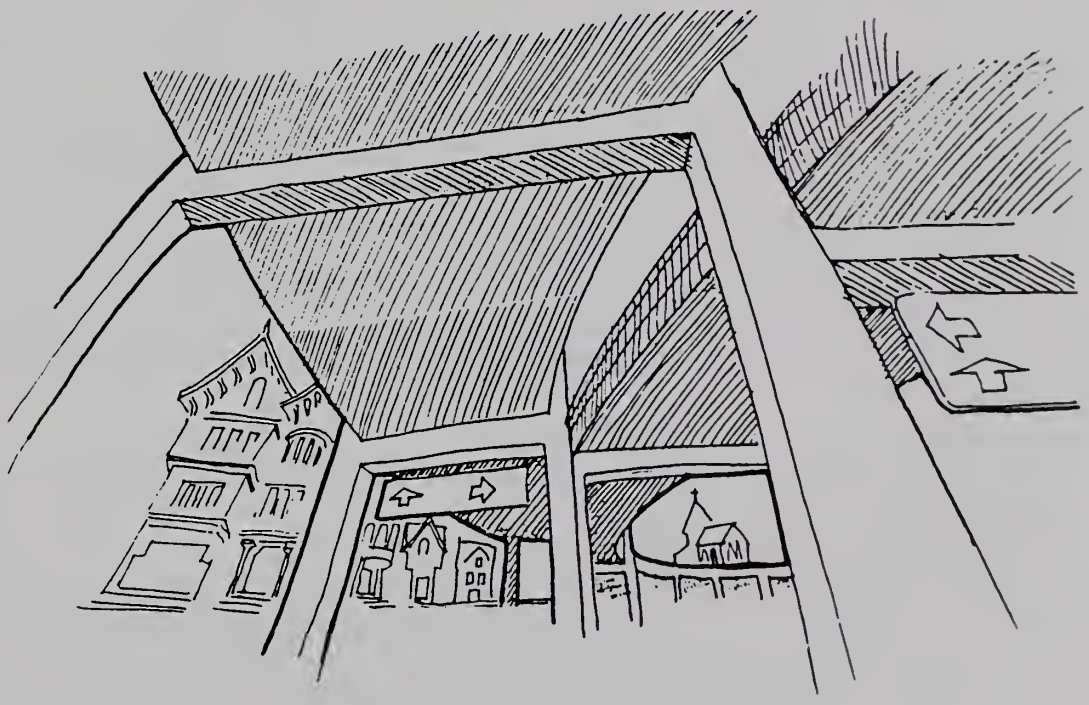
John Taylor
Clerk

File No. 85-95-3

OCT 27 1995
Date Approved

Frank M. Jordan
Mayor

Central Freeway
Citizens' Advisory Task Force
Report of Recommendations



October 1995

The Preferred Alternative

As directed by resolutions #541-92 and 9-94
Board of Supervisors
City and County of San Francisco

Acknowledgements

This report of the Citizens' Advisory Task Force for the Central Freeway results from many months of presentations, meetings, and discussions on the proposed retrofit of the Central Freeway between Mission and Fell streets, and the wide variety of possible alternatives.

We thank all of the people who have attended the community meetings and those who have attended the Task Force meetings. We acknowledge the commitment and dedication of the following Task Force members, who generously gave their time to attend Task Force meetings, community meetings, and design charettes, and to read the many pages generated by the study:

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Mary Anne Miller and Norman Rolfe, San Francisco Tomorrow
SPUR
San Francisco Beautiful

Throughout the process of evaluating Central Freeway alternatives, our way was made easier by the vision and commitment of the citizens, City staff, and elected officials who helped to create the City's Master Plan and area plans, as well as Proposition M. We have worked hard to select an altenative which will be true to our City, and to the legacy of those who have given so generously to San Francisco.

Wayne M. Corn, Chair
Citizens' Advisory Task Force for the Central Freeway

Section I: The Purpose

The Citizens' Advisory Task Force for the Central Freeway was created in July 1992 by the San Francisco Board of Supervisors to study alternatives for the Central Freeway. The Task Force was expanded in February 1995 to 28 members representing most of the City's neighborhoods. Our overall purpose, as declared by the Board of Supervisors resolution, is:

> *". . . to plan land use and transportation improvements for the Hayes Valley and Western Addition neighborhoods."*

The immediate objective of the Task Force during the term of the Central Freeway Transportation Study has been to:

> *". . . work with city staff, Caltrans and the study team in developing traffic and transit improvements for the Central Freeway corridor."*

Section II: The Context

In the 1950's, when the Central Freeway was built, San Francisco was busily demolishing historic neighborhoods to build freeways and tearing up its streetcar tracks. Today, San Francisco is reconsidering its earthquake-damaged freeways and replacing the streetcars. In the 1960's, the Freeway Revolt and creation of BART ushered in the regional movement toward multi-modal transportation. In 1986, San Franciscans voted for Proposition M, the priority policies of which affirmed the importance of preserving neighborhoods as essential to the identity, economic health, and quality of life of San Francisco. In 1989, San Franciscans voted to tax themselves to replace historic streetcar lines and build four new rail corridors to add to the Muni Metro system.

Today, the Central Freeway Task Force has acknowledged the vision and values of present-day San Francisco, integrating traffic flow, environmental quality, neighborhood cohesion, historic preservation, and public transit into our selected alternative (see appendix A). We believe that the Task Force Alternative 8 moves traffic better than the present Central Freeway, and affirms the vision and spirit of the Proposition M priority policies and the City's current Master Plan. The completion of *any* Central freeway project, whether retrofit or a rebuild, will be several years from now, possibly in the next century. Alternative 8 takes a long-term view, because the decision we make today will affect the character of the City for decades to come. San Francisco has been presented with an historic opportunity to restore an important part of the City, as we have done for The Embarcadero and Hayes Street.

Present conditions call for the removal of the existing concrete section of the Central Freeway. The integrity of the existing double-deck structure has been severely compromised by both its age and the damage sustained in the Loma Prieta Earthquake. As vestige of a larger freeway system that was never completed, the Central off-ramp distributes traffic poorly onto city streets. Its bulk cruelly divides the City and serves as a magnet for crime. Other factors which necessitate the removal of this damaged structure are:

- Seismic safety: Another large earthquake could cause the damaged structure to collapse, repeating the Cypress tragedy. The existing freeway represents an imminent threat to the physical safety of neighbors and drivers. The retrofit alternatives put forward by Caltrans would keep the freeway standing, with some traffic moving on it, for the next two to five years during construction. We agree with Wilbur Smith & Associates that the safety of both drivers

and residents could not be reasonably assured because of the likelihood of further earthquakes or construction mishaps.

- Traffic flow: Presently, traffic coming onto the Central Freeway at Oak Street must cross the traffic coming off the freeway onto Fell Street. Since the earthquake, traffic has increased 72 percent on Oak Street and 48 percent on Fell Street. The increased traffic levels have unfairly impacted the dense residential Oak and Fell corridors, the Panhandle, and Golden Gate Park.
- Public safety: The massive elevated structure has divided the Hayes Valley neighborhood in two, creating a neighborhood magnet for prostitution, drug dealing, muggings and bashings. This blight extends south across Market, Valencia, Duboce, and Mission streets, dividing neighborhood from neighborhood and costing countless dollars in lost economic activity.
- Cost/value impact: The base retrofit proposed by Caltrans (Alt. 1) is estimated to cost $45 to 50 million. This does not include replacement of the roadbed, which has a remaining lifespan of less than 10 years. The 'Hybrid' alternative, also proposed by Caltrans (Alt. 2), is estimated to cost $65 million, and where it includes major roadbed replacement and reconfiguration, it replicates the existing maldistribution of traffic, causing more problem "E" and "F" intersections (7) than our preferred alternative (4).

Section III: The Preferred Alternative

Of the nine alternatives that the Task Force studied in depth, the Task Force selected Alternative 8, with the option of a covered trench crossing under Page and Haight streets or a surface boulevard on Octavia Street. The question of whether to build the trench or the boulevard should be left until later in the planning process, when the preferences of those in the neighborhood have been considered together with better data about traffic and transit flow. Separating Interstate 80 traffic from U.S. 101 traffic, which presently merges on the Central, warrants further study during the environmental process. Alternative 8 moves traffic better over city streets than the present freeway, allowing more choice of direction. The preliminary study by Wilbur Smith & Associates shows Alternative 8 having fewer level "F" intersections (the worst grade) than either the retrofit alternatives or the low deck, and fewer "E" intersections than the retrofits. In addition to moving traffic, Alternative 8 maintains or improves transit service along major transit corridors, and provides opportunities for weaving neighborhoods, and the entire city, back together.

The Central Freeway area is where Hayes Valley, Civic Center, SOMA, the Mission, and Upper Market meet. An alternative that heals this area will enrich the City enormously, both aesthetically and economically. The estimated cost of our preferred alternative is $75 million, $10 million more than the hybrid retrofit (Alt. 2). It provides much better value through improved distribution of traffic over City streets, a safer and less obtrusive structure, and improvement of the safety and quality of life of those neighborhoods and individuals most affected by the current truncated freeway.

The main elements of Alternative 8 are as follows.

1. Eliminate the elevated freeway through Hayes Valley and over Market Street: Elevated freeways are inappropriate to the dense historic neighborhoods of San Francisco. Alternative 8 uses at-grade or sunken roadways to move traffic effectively across Market Street, eliminating the blight, noise, crime, and earthquake danger of the old elevated structure. Market Street, the City's main ceremonial and transit spine, will benefit tremendously when the overhead structure is removed. The spectacular renaissance of Hayes Street after the removal of the freeway is testament to the perennial vitality of San Francisco's older neighborhoods. Let central Market Street become as vital as it is downtown and Upper Market.

2. Create a better Central Freeway/Van Ness Avenue connection: The Central Freeway and Van Ness Avenue *are* U.S. 101 through the City. A better connection between South Van Ness and the Central Freeway will improve north-south traffic flow and relieve some of the traffic pressure from residential Gough and Franklin streets. Presently, there is no direct exit to South Van Ness; cars must exit onto Mission Street and turn left onto northbound South Van Ness, crossing the flow of traffic coming south to enter the freeway. Traffic then has to negotiate the bottleneck at South Van Ness and Howard Street. These two intersections have some of the highest numbers of accidents in the City. Alternative 8 includes the following improvements:

    a. Direct off-ramp to South Van Ness: Northbound traffic will exit directly to South Van Ness, not Mission Street, and will no longer have to make the left turn from Mission to South Van Ness, crossing southbound South Van Ness traffic.
    b. Improve South Van Ness/Howard intersection: Reconfigure the intersection to improve north-south traffic flow along South Van Ness to the existing freeway entrance and from the new exit.

3. Create a Duboce Street entrance and exit: The present Mission Street exit will be eliminated, and replaced with an entrance and exit on Duboce between Mission and Valencia streets. This will reduce the conflict between Upper Market traffic and South Van Ness traffic at the existing spiral on-ramp, and will bring Upper Market traffic onto and off of the freeway without crossing Mission Street at grade, allowing both Upper Market traffic and Mission Street transit to move better.

4. Improve transit service: Alternative 8 recognizes the essential role transit plays in moving people through the city, and is designed to facilitate existing Muni service and planned transit improvements.

    a. Mission Street: Mission Street is a major transit artery, carrying more bus passengers than any other street in the City, and will become even more important as a connection to the new downtown Caltrain terminus. Adding the South Van Ness exit and the Duboce entrance and exit allows better Muni bus movement along a two-way Mission Street between South Van Ness and Duboce.
    b. Van Ness Avenue: Transit service on Van Ness should be improved by such measures as dedicated lanes in the median, improved traffic signal timing, and/or eliminating parking during peak hours. Reducing conflicts between Muni buses and cars on Van Ness will facilitate both transit ridership and traffic flow.
    c. Haight and Page streets: In Alternative 8, Octavia traffic will move underneath Page and Haight streets, allowing buses to move freely.
    d. Market Street: By locating the freeway terminus at Octavia Street, after most of the Muni lines have veered off of Market, Alternative 8 creates only one new signal on Market Street, which will affect only one Muni line, running on 10-minute headways. The F-Line could be allowed to pre-empt the traffic signal at Octavia to prevent any delay in transit service.

5. Distribute traffic equitably: The Central Freeway was designed as part of a gargantuan freeway network, but presently serves as an elongated off-ramp. Since the removal of the northern section of the freeway after the Loma Prieta Earthquake, the entire burden of traffic north of Market has fallen on Oak and Fell streets. There have been significant increases in traffic on already heavily travelled residential streets. This has also brought increased traffic into Golden Gate Park. Alternative 8 would redistribute some traffic away from the most heavily impacted streets so that **no single neighborhood shoulders the entire burden**.

a. Oak and Fell streets: These two streets have borne much of the east-west traffic formerly carried on Turk and Golden Gate streets, where the old freeway used to end. Traffic has dropped on Turk and Golden Gate streets. Traffic should be shared more equitably between the two couplets and neither should be forced to bear significantly more traffic than before the earthquake.
b. Franklin and Gough streets: Adding a direct South Van Ness exit and improving South Van Ness traffic flow and signal timing will shift some traffic, especially trucks, to Van Ness Avenue. Two-way traffic on Gough should be retained as per the Master Plan.
c. The Tenderloin: The Tenderloin is one of the densest residential neighborhoods in the City and needs to be protected from excessive through traffic in the residential section north of Turk Street. The roads should be designed so that traffic diverted from the Central does not negatively impact the north-south streets in the Tenderloin.
d. South of Market: Traffic increases from any Central Freeway scheme should be limited as much as possible to non-residential South Van Ness Avenue and Division Street, and protect existing two-way streets, such as 11th and 12th, from excessive through traffic.

6. Improve signage and signalization: Signage and signal timing at the freeway exits and entrances and on surface streets can be utilized much more effectively to allow efficient traffic flow and distribute it fairly.

Section IV: Economic Development

Alternative 8 creates a host of economic development opportunities for the adjacent neighborhoods and the City as a whole.

1. Market Street revitalization: In his book *Great Streets,* Allan Jacobs calls Market Street a "once great street." In 1967, San Franciscans concerned about the decline of Market Street since the elevated freeways were built in the 1950's voted to spend $25 million to beautify Market Street. Some energy and vitality has returned to Market Street of late, brought by the return of public transit and the removal of the The Embarcadero Freeway. By eliminating the remaining overhead freeway, our preferred alternative would make Market Street whole again. Vital neighborhood commercial districts have developed on Hayes Street, Valencia Street, and Upper Market, attracting residents and tourists alike. The area surrounding the Central Freeway is the essential link between them. The renaissance of Market Street from the foot of Twin Peaks to the Bay would be of tremendous benefit not only to the adjacent neighborhoods but to the City as a whole.
2. Opportunities for Housing: Alternative 8 creates opportunities for housing on land opened up by the freeway's removal, and on adjacent parcels that will be freed of crime and blight and have views opened. Housing in this neighborhood is easily accessible to both major public transit lines and the Civic Center. A surface boulevard on Octavia would reclaim even more land.

Section V: Costs and Construction Options

Preliminary cost estimates from Wilbur Smith & Associates put Alternative 8 at $75 million, approximately the same as the single deck alternative (Alt. 3). Alternative 8 frees several acres of usable land and increases the value of adjacent land by removing the elevated structure. By moving

traffic more efficiently south of Market, this alternative may allow the possibility of a surface boulevard, similar to Dolores or Park Presidio, on Octavia Street. The advantage of this is threefold: it would decrease the cost of the project by approximately $25 million, reclaim more land from the freeway, and would minimize construction time and disruption, as traffic flow would be restored to Octavia much sooner. The disadvantages would be decreased traffic flow and possible conflicts with Haight and Page transit. Another variation we want to see studied is the possibility of using Division Street to carry some U.S. 101 traffic, eliminating the traffic "weave" on the Central. This variation could also help reduce Octavia traffic, thereby eliminating the need for the costly trench.

Section VI: Looking Ahead

Traffic volumes on the Central Freeway will be affected by the following factors and need to be considered as part of any long-term solution:

1. Completion of other freeway projects: Presently, the Embarcadero and Terminal Separator replacement project is in final environmental review. The closure of these structures after the earthquake caused a major shift in city-wide traffic patterns. Traffic counts show that while the overall traffic levels in the City have remained relatively constant, there has been a 30 to 40 percent decrease in peak-hour traffic using The Embarcadero to access the City's north-east neighborhoods. Much of this traffic has shifted to other corridors, causing a corresponding surge in traffic volumes on south of Market Streets (7th, 8th, 9th, and 10th) and the one-way street couplets of the Central Freeway area (Larkin & Hyde, Franklin & Gough, Oak & Fell). Although none of the alternatives under study for The Embarcadero would carry as many cars as the freeway did, completion of the project will provide some relief for the Central Freeway corridor. Similarly, completing the 280 retrofit will relieve U.S. 101 of some commuter traffic to downtown.

2. Completion of regional rail projects:. The biggest expansion of Bay Area rail transit since BART was built in the 1970's is presently underway. The Joint Powers Board is planning an extension of Caltrain to downtown San Francisco, with an increase to BART levels of service and electrification and modernization of the rolling stock. BART-level service to the Peninsula and Silicon Valley could provide a viable public transit alternative to many commuters using the Central Freeway/U.S. 101 corridor within the next 5 to 10 years. BART is extending its tracks along three lines in the East Bay, and south from Colma to SFO. In the City, the F-Line is running, with the north Embarcadero extension well under way, while the Embarcadero turnback and south Embarcadero/Mission Bay light rail projects are under construction. These projects will be joined by the planned Third Street, Geary Boulevard, and Chinatown/North Beach light rail projects. The completion of these projects will provide alternatives for many who presently commute by car.

3. Changes to federal, state, and regional transportation policies: Fiscal and environmental concerns are causing a reassessment of transportation policies, which will likely result in motorists paying a larger share of costs associated with driving. A recent federal EPA\Department of Transportation report cited increased parking prices, higher tolls during peak hours (congestion pricing), and road pricing as some of the most effective ways to meet air quality requirements. Regionally, MTC and think-tanks like Bay Vision 20/20 are promoting similar measures to solve the Bay Area's traffic woes. San Francisco's new Transportation Element of the Master Plan may restructure parking downtown as a way of encouraging ride sharing, transit use, and telecommuting. Cash-strapped governments will

increasingly turn to market mechanisms to prevent the need for costly highway projects, and encourage least-cost alternatives to drive-alone commuting.

Section VII: Conclusion

Alternative 8 was developed in response to public comment on seven alternatives from regular Task Force meetings and community meetings, the consultants' cost estimates and traffic models, and concerns expressed by the Board of Supervisors' Housing and Land Use Committee. It is an attempt to balance the many concerns—traffic flow, cost, construction time, neighborhood impacts, economic vitality, safety, and quality of life—expressed by citizens, the Master Plan, and the Board of Supervisors' resolutions. Alternative 8 moves traffic better and more efficiently than the present freeway, eliminating the need for a low, wide deck over Market Street and improves conditions in Hayes Valley while looking to the interests of the City at large. In this alternative, we attempted to balance the many concerns addressed in the City's various Master Plan elements and Proposition M priority policies, to create an alternative that is fair to both commuters and to residents living adjacent to the freeway.

The Board of Supervisors has selected this alternative, along with Alternative 3 (the low deck over Market Street) to move forward into the environmental review process. Alternatives 8 and 3 are roughly comparable in terms of cost and both move traffic better than the present freeway. Alternative 8, by virtue of its improvements to the Central Freeway's on- and off-ramps, distributes traffic more evenly, eliminating the need for a lower, wider, elevated freeway across Market Street.

As we move forward into the environmental review process, many vital interests of the City other than traffic must be studied in the EIR process. The participation of the planning department in the preparation of the EIR is essential in assuring that the interests of the City as a whole are addressed. The Master Plan, Proposition M, the Civic Center plan, and the Hayes Valley, SoMa, and Mid-Market redevelopment studies must be integrated with the Central Freeway environmental review to prevent conflicting City policies and duplication of effort.

The ongoing participation of the Task Force to provide oversight and citizen input during the environmental review, demolition, and construction process is essential if the interests of the City and those most affected by this project are to be heard and protected. More vigorous citizen and City oversight is necessary to prevent the unnecessary disruption experienced in the Interstate 280 retrofit.

Funding: $40 million in Emergency Relief (ER) funds were allocated by the Federal Department of Transportation for the Central Freeway project. A 'comparable capacity' benchmark is used to determine the amount of Federal ER funds which will be allocated to any given project. This appears to limit only the amount of funds which can be allocated for relief, but does not appear to limit flexibility in the use of the funds for a replacement funds. Alternative 8 is eligible for those funds.

That over $16 million of the funds have been spent by Caltrans is of greater concern. The City must protect its interests in assuring that all ER and other funds spent are spent towards a long-term solution, rather than piecemeal interim measures.

Interstate 80 at Fifth Street—what a low deck over Market Streetcould look like. By distributing traffic more evenly, Alternative 8 eliminates the need for an elevated structure over Market Street

Appendix A: Goal and Criteria

as adopted unanimously by the Task Force, June 1995

Goal:

Select a preferred alternative of traffic and transit improvements for the Central Freeway corridor.

Criteria:

Minimize negative visual impacts

- Apply good urban design principles.
- Recognize the importance of Market Street as a visual corridor, a major public transit corridor, and a grand boulevard, and advance the City's efforts to improve Market Street.
- Preserve the historic character and structures of the affected neighborhoods.

Promote neighborhood cohesion

- No single neighborhood should bear the burden of freeway traffic.
- High-volume traffic should be routed around neighborhoods and onto major traffic arteries.
- Design should encourage traffic to move within legal speed limits.

Allow the maximum reclamation of freeway land for housing, open space, and neighborhood-serving commercial uses

Allow for better management of all elements of the transportation system (Multimodalism)

- Promote public transit operations and the City's Transit-Preferential Streets Program.
- Facilitate pedestrian access to public transit.
- Be compatible with both the existing public transit system and planned improvements.

Accommodate traffic circulation

- Allow for better integration of the freeway system with the system of City streets.
- Offer better choices of freeway access/egress direction.
- Minimize disruption during construction period.

Promote a healthy environment

- Respect and improve the quality and integrity of public open spaces.
- Allow for safe neighborhood streets.
- Promote improved air quality and reduction of noise impacts.

Appendix B: Proposition M Priority Policies

1. That existing neighborhood-serving retail uses be preserved and enhanced and future opportunities for resident employment in and ownership of such businesses enhanced;

2. That existing housing and neighborhood character be conserved and protected in order to preserve the cultural and economic diversity of our neighborhoods;

3. That the City's supply of affordable housing be preserved and enhanced;

4. That commuter traffic not impede Muni transit service or overburden our streets or neighborhood parking;

5. That a diverse economic base be maintained by protecting our industrial and service sectors from displacement due to commercial office development, and that future opportunities for resident employment and ownership in these sectors be enhanced;

6. That the City achieve the greatest possible preparedness to protect against injury and loss of life in an earthquake;

7. That landmarks and historic buildings be preserved; and,

8. That our parks and open space and their access to sunlight and vistas be protected from development.